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Diseases Cancer, Ophthalmology & Pediatric



Risk Factors Regarding Zoonotic
Acetaminophen for the Management

Highlights

Patients with Chronic Prostatitis
Zoonotic Disease among Community

Discovering Thoughts, Inventing Future

VOLUME 19 ISSUE 4 VERSION 1.0



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Considerations Necessary Regarding Prostate Cancer with the Options of Surgical Removal of the Prostate Gland or with Androgen Deprivation (Aka Testosterone Inactivating) Therapy (ADT) as Follow-on or Primary Treatment

By Charles Maack

Introduction- Charles (Chuck) Maack (ECaP) – Prostate Cancer continuing patient since 1992, Advocate, Activist, and Mentor to Men so diagnosed and their Caregivers online Worldwide.

With surgical removal of a cancerous prostate gland, PSA nadir should drop to near total absence well into the ultrasensitive testing level below 0.5ng/ml. If this is not achieved, it is likely all cancer cell activity has not been removed, and further treatment is necessary.

A variety of tests should be performed for baseline markers among which should be free Testosterone to determine level as well as any bone issues; deoxypyridinoline (DpD) urine test to determine bone resorption; prolactin level since if high could inhibit ADT therapy as well as cause several other issues (See: <https://tinyurl.com/7w5omeo>); lipid or fatty acid profile since both de novo and dietary lipids seem to be important contributors to prostate cancer growth and development; inflammation markers since inflammation may drive resistance to androgen deprivation therapy (ADT); and any other markers to aid in determining the best strategy for treatment.

GJMR-F Classification: NLMC Code: WJ 752



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Considerations Necessary Regarding Prostate Cancer with the Options of Surgical Removal of the Prostate Gland or with Androgen Deprivation (Aka Testosterone Inactivating) Therapy (ADT) as Follow-on or Primary Treatment

Charles Maack

INTRODUCTION

Charles (Chuck) Maack (ECaP) – Prostate Cancer continuing patient since 1992, Advocate, Activist, and Mentor to Men so diagnosed and their Caregivers online Worldwide.

With surgical removal of a cancerous prostate gland, PSA nadir should drop to near total absence well into the ultrasensitive testing level below 0.5ng/ml. If this is not achieved, it is likely all cancer cell activity has not been removed, and further treatment is necessary.

A variety of tests should be performed for baseline markers among which should be free Testosterone to determine level as well as any bone issues; deoxyypyridinoline (DpD) urine test to determine bone resorption; prolactin level since if high could inhibit ADT therapy as well as cause several other issues (See: <https://tinyurl.com/7w5omeo>); lipid or fatty acid profile since both de novo and dietary lipids seem to be important contributors to prostate cancer growth and development; inflammation markers since inflammation may drive resistance to androgen deprivation therapy (ADT); and any other markers to aid in determining the best strategy for treatment.

If imaging is unable to identify the presence of metastasis, Androgen Deprivation (aka testosterone inactivating) Therapy (ADT) should be considered, or salvage radiation in company with ADT. Continuing presence of cancer activity should be met with the intent of eradication, or at least long-term control and management. Treatment with minimal ADT medications with the idea that additional medications would be added when the earlier fail, can lead to unexpected accelerated cancer activity and if not noticed early on can contribute to early mortality. All avenues that contribute to cancer cell growth and proliferation should be addressed.

Since testosterone (aka androgen) is a known stimulator to such growth, production sources of testosterone should be inhibited. Keeping in mind

“do no harm,” an antiandrogen, with bicalutamide (generic of Casodex) most often prescribed, (flutamide/Eulexin or nilutamide/Nilandron also available) should first be prescribed beginning a week prior to prevent a “flare” effect of sudden testosterone production if then adding the next necessary medication of LHRH agonists Lupron, Trelstar, Eligard, or Zoladex. If initially prescribing the antagonist degarelix/Firmagon, the antiandrogen can be prescribed simultaneously or following this medication since it does not cause the “flare” effect.

The antiandrogen serves to inhibit androgen precursors produced by the adrenal glands travelling to cancer cell androgen receptors. The foregoing are the two initial medications that should be prescribed, and then testosterone as well as prostate-specific antigen (PSA) levels closely monitored since both should significantly drop to indicate ADT effectiveness. If an agonist is prescribed, I would encourage initial administration be a single month dose until it is determined PSA and testosterone levels have significantly dropped indicating the lurking cancer cells are androgen dependent. A testosterone level of 20ng/dl or below indicates effective testosterone clinical castration/control. A PSA level dropping to a nadir of less than (<) 0.5ng/dl is expected and also indicates these medications are serving their role. If the PSA level does not drop below 0.5ng/ml, testosterone may still be reaching 5 Alpha Reductase (5AR) enzymes while enroute to cancer cell androgen receptors. When that is the case, these enzymes convert testosterone to dihydrotestosterone (DHT), a much more powerful stimulant to cancer cell growth and proliferation. To inhibit this conversion, the addition of the 5AR inhibitor (5ARI) dutasteride/Avodart should be considered. The prescribing of these three medications in combination is considered ADT3, also known as triple androgen/testosterone/hormonal blockade.

When ADT3 with the foregoing medications show failure by rising PSA, other medications manufactured to replace the antiandrogen and

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considered more effective (but also much more expensive) could be enzalutamide/Xtandi or apalutamide/Erleada, since these are also “next step” medications when PSA is rising for non-metastatic castration-resistant prostate cancer (nmCRPC). On the near horizon will likely be darolutamide/ODM-201, on the verge of approval by the FDA, for pre-chemotherapy nmCRPC.

The foregoing are considerations to avoid moving to chemotherapy, more toxic to the system, until necessary (again, “do no harm”). However, should even these several medications indicate failure by continuing PSA elevation, or if even early on there is evidence of high risk for metastasis, chemotherapy with docetaxel/Taxotere added to the ADT should be considered. Important to also keep in mind: if a nadir of less than ($<$) 0.5ng/ml is never reached with the foregoing ADT medications, then chemotherapy should be considered as an addition to the ADT at the point that determination is evident.

Recognizing that ADT has an effect on bone health as well as contributing to osteonecrosis of the jaw, imaging should be performed with Quantitative Computerized Tomography (QCT). QCT imaging can distinguish vascular calcifications and degenerative joint disease as not being bone, thus providing a more accurate bone mineral density (BMD) result. The supposed “Gold Standard” Dual-Energy X-ray Absorptiometry (DEXA) imaging falsely reads calcification and calcium in blood vessels close to bone as being bone density, giving the false impression that all is well when it is not. Whether or not the imaging identifies bone issues, treatment to prevent issues occurring should commence with ADT. Understanding these issues and recommendations for treatment can be reviewed here: <https://tinyurl.com/3m78ymg>.

Please Note: Medications involved in Androgen Deprivation Therapy (ADT) are known to increase cardiovascular risk. Thus, IT IS IMPORTANT that prior to prescribing any form of ADT medication the patient's other health issues, that would include already present cardiovascular issues, are determined. As noted in: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4516188/>

“Androgen deprivation therapy (ADT) has been the mainstay of treatment for advanced prostate cancer for decades and has been shown to control disease and improve symptoms. In addition, for men with high-risk localized or locally advanced prostate cancer, short-course ADT in combination with radiotherapy improves survival. There is evidence that ADT increases cardiovascular risk, particularly in men with preexisting cardiovascular disease. This increased risk may apply even with short-course ADT. In an individual patient, the benefits of ADT should be balanced against the risk, and patients who require ADT should have risk factors for cardiovascular disease optimized. There is some

evidence to suggest that more contemporary methods of delivering ADT may reduce cardiovascular risk.”

Dr. Matthew Roe, a Professor of Medicine at Duke University's Clinical Research Institute (DCRI), the Faculty Director of the Global Outcomes Commercial MegaTrials program, and the Director of their Fellowship Program, remarks: “If a patient who has advanced prostate cancer and known cardiovascular disease is being considered for androgen deprivation therapy, it is important that he speak with his cardiologist. (Presumably, both a cardiologist or cardiovascular specialist and a urologist or oncologist would treat him.) He needs to ensure that all the providers have a discussion about what the best and safest treatment would be before therapy begins. Obviously, this trial (the PRONOUNCE trial regarding which is safer for patients with cardiovascular issues, the GnRH agonist Lupron or antagonist Firmagon (or neither?) <https://tinyurl.com/yxnw5kb6>) is not completed yet so we don't have any answers. In the meantime, it is certainly in the patient's best interest to ensure that his providers are communicating and trying to jointly determine the right approach.”

So much to be considered, but so important to do so.

Disclaimer: Please recognize that I am not a Medical Doctor. Rather, I do consider myself a medical detective. I have been an avid student researching and studying prostate cancer as a survivor and continuing patient since 1992. I have dedicated my retirement years to continued deep research and study in order to serve as an advocate for prostate cancer awareness, and, from an activist patient's viewpoint, as a mentor to voluntarily help patients, caregivers, and others interested develop an understanding of this insidious men's disease, its treatment options, and the treatment of the side effects that often accompany treatment. There is absolutely no charge for my mentoring – I provide this free service as one who has been there and hoping to make their journey one with better understanding and knowledge than was available to me when I was diagnosed so many years ago. IMPORTANTLY, readers of medical information I may provide are provided this “disclaimer” to make certain they understand that the comments or recommendations I make are not intended to be the procedure to blindly follow; rather, they are to be reviewed as MY OPINION, then used for further personal research, study, and subsequent discussion with the medical professional/physician providing their prostate cancer care.



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Health Seeking Behavior, Cost of Illness and Quality of Life of Patients with COPD among 35 Years & above Rural Population of Gurugram, Haryana

By Balbir Singh Deswal & Ankita Khokhar

SGT Medical College, Hospital & Research Institute

Abstract- Background: COPD is the 4th leading cause of death worldwide and predicted to be third by 2030. In India, COPD accounts for 7% of mortality and 3% DALYs loss.

Objective: The study undertaken to assess the health seeking behaviour and cost of illness of COPD and the influence of severity of the disease over the cost and the quality of life.

Materials and Methods: The study conducted in 115 patients aged 35 years and above, a rural population of Gurugram, Haryana. Cost of illness (direct and indirect costs) was calculated in Indian rupees from the expenditures of the hospital visits, pharmacotherapy, oxygen therapy, biochemical investigations, diagnostic procedures, physiotherapy and hospitalization due to acute exacerbations by patient interview and review of patient's case history, medical and billing records. Quality of life of patients in Stage III and Stage IV COPD was estimated using St. George's Respiratory Questionnaire (SGRQ) score. Data collected on structured schedule & analyzed.

Keywords: COPD, health behavior, medical cost, quality of life.

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Health Seeking Behavior, Cost of Illness and Quality of Life of Patients with COPD among 35 Years & above Rural Population of Gurugram, Haryana

Balbir Singh Deswal ^α & Ankita Khokhar ^σ

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Results: Out of the total costs, highest spent on direct medical costs (91.02%), less on indirect (8.98%). Hospitalizations, associated co-morbidity, and length of stay increased the cost. The mean cost incurred by patients with stage II COPD was Rs.3179.62 ± 99.01 per visit to the hospital, stage III was Rs.16414.79 ± 8365.79 and stage IV was Rs.44077.16 ± 15686.21 per visit. As the severity of COPD increased both direct and indirect costs increased, and the quality of life of the life decreased significantly (P<0.05).

Conclusion: Since acute exacerbations are the main cause of hospitalization among COPD patients, strategies to prevent severe exacerbations could be very cost effective and may improve the quality of life.

Keywords: COPD, health behavior, medical cost, quality of life.

I. INTRODUCTION

COPD is the 4th leading cause of death worldwide and predicted to be third by 2030. In India, COPD accounts for 7% of deaths and 3% DALYs loss.^{1, 2} Study was conducted to determine health-seeking behavior & economic burden of COPD cases

and the influence of severity of the disease over the cost of illness and the quality of life of COPD among 35 years & above rural population of Gurugram, Haryana.

II. METHODOLOGY

The study was conducted among field practice area of PHC Garhi Harsaru of Gurugram for one year from Jan 2018 to Dec 2018. Presuming the prevalence of cases about 7% among 35 years & above from previous study³, a sample size of the population was calculated using formula $n = (Z_{1-\alpha/2})^2 p (1-p) / d^2$ where p is prevalence and relative precision of 10% with anticipated non-response 10%. Population of all 14 villages consisting of 7700 households under PHC Garhi Harsaru listed as per 2011 census, and seven villages selected by simple random sampling. Out of these seven villages, 700 households were selected by probability proportion to size (PPS) sampling methods. All the 1434 individuals above 35 years of age found in these households were examined to detect chronic obstructive pulmonary diseases. Case definition was subject suffering from cough with expectoration for three or more months in a year for not less than two years and breathlessness. Spirometry done to confirm the case & severity of the condition (Gold criteria).⁴ A total of 137 cases listed on screening, of which 115 were taken as a confirmed case of COPD as per case definition, spirometry & pulmonary medicine consultant advice.

Cost of illness, which included the direct medical and non-medical, and indirect costs, calculated in Indian Rupees from the expenditures of the hospital visits, pharmacotherapy, oxygen therapy given, laboratory tests, diagnostic procedures, physiotherapy and hospitalization due to acute exacerbations. Quality of life (QOL) of all patients of COPD was assessed using St. George's Respiratory Questionnaire (SGRQ) Ver 2.3 after obtaining the necessary permission from the author.⁵ Data collected on structured schedule and analyzed using SPSS ver 22. Prior ethical clearance was taken from Institutional Ethical Committee.

As per the definitions of the GOLD criteria guidelines according to the severity of the disease taken as:

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Stage I (Mild) - $EV_1/FVC < 70\%$, $FEV_1 \geq 80$

Stage II (Moderate) - $FEV_1/FVC < 70\%$, $50\% \leq FEV_1 < 80\%$ predicted

Stage III (Severe) - $FEV_1/FVC < 70\%$, $30\% \leq FEV_1 < 50\%$ predicted

Stage IV (Very Severe) - $FEV_1/FVC < 70\%$, $FEV_1 < 30\%$ predicted or $FEV_1 < 50\%$ predicted plus chronic respiratory failure and having stable co morbidity.

III. RESULTS

The mean age of the study patients was 52.56 ± 11.78 years, and 55 (47.83 %) patients were in the age group of 35-50 years, followed by 21 (18.20%) in 51-60 years and 39 (33.91%) patients in above 60 years. 71 (61.74%) were males & 44 (38.26%) were females. Out of total 115 cases, 57 (44.8%) patients were suffering from stage I & II COPD followed by 42 (40%) patients with stage III COPD and 16 (15.2%) with stage IV COPD. Existing stable co-morbidities found in 43 patients (40.95%) of which, treated tuberculosis seen in 15 (14.28%) patients. Other co-morbidities like diabetes, hypertension, diabetes and hypertension and ischemic heart disease also accounted 3.0 to 5.71% each.

a) Health seeking behavior

Among all COPD patients, 87.83% seeks immediate medical help in case of any breathing discomfort while 12.7% neglected their ailment & did not take any medical advice. Of these 46.09% preferred allopathic, 42.61 % preferred the Indian system of medicine & 11.30 % preferred naturopathy. 36.52% utilized government system while 6.09% could go to qualified private doctor, 41.74 depended upon quacks & 15.65% chemist store.

b) The economic cost burden of COPD case

Out of the total costs, highest spent on direct medical costs (91.02%) and followed by indirect costs (8.98.%) as depicted in Table 1. Hospitalizations, associated co-morbidity and length of stay increased the cost. The mean cost spent by the patients with stage II COPD was $Rs.3179.62 \pm 99.01$ per visit to the hospital, stage III was $Rs.16414.79 \pm 8365.79$ and stage IV was $Rs.44077.16 \pm 15686.21$ per visit (Table 2). All the patients suffering from stage I & II COPD were treated in the outpatient department. Out of 42 patients with stage III COPD, 29 (32.4%) hospitalized, and 13 (12.4%) treated in the outpatient department. Sixteen patients with stage IV COPD admitted in the inpatient wards of the Pulmonary Medicine Department. The mean length of hospital stay was found to be 9 ± 1.2 days for stage III patients and 11.75 ± 2.5 days for stage IV patients. As the severity of the disease increased both the length of hospital stay as well as cost burden increased as shown in Table 3.

c) Quality of life of patients with stage III and stage IV COPD

The quality of life of inpatients was evaluated by using SGRQ. Out of 115 patients, 45 were inpatients, of which 29 were with stage III COPD and 16 with stage IV COPD. The mean SGRQ QOL score of the 115 patients was found to be 53.96 ± 10.38 . The SGRQ QOL score of the stage III COPD patients was found to be 44.69 ± 9.27 and stage IV patients was 63.24 ± 11.49 . As the severity of the disease increased the quality of life of COPD cases significantly decreased (). Cost of the disease negatively correlated with quality of life. As the quality of life declined the cost of illness increased significantly ($p < 0.05$).

Table 1: Economic cost burden of COPD case

Total Annual expenditure (INR) on COPD	No. of COPD subject (%)	Mean expenditure/head
≤ 10000	31 (26.96%)	Annual direct Cost = Rs. 13,477/- (91.01%)
10001-20000	71 (61.74%)	Annual Indirect cost = Rs. 1,327/- (8.99%)
≥ 20000	13 (11.30%)	Annual total mean cost = Rs. 14, 804 /- (100%)

Table 2: Economic Costs as per the severity of COPD

Cost category	Cost drivers	Stage I & II (n=57) (mean cost in rupees per patient per hospital visit)	Stage III (n=42) (mean cost in rupees per patient per hospital visit)	Stage IV (n=16) (mean cost in rupees per patient per hospital visit)
Direct Medical Cost	Practitioner	200	1776.5	3612.5
	Hospitalization	0	5897.87	19450
	Laboratory investigations	1425	1549.78	1737.81
	Arterial blood gases	350	484.04	743.75
	Diagnostic procedures	375	2147.34	2668.75
	Pulmonary function tests	500	500	500
	Drugs	113.1	658.02	2232.47
	Oxygen therapy	1.78	27.12	70.31
	Nebulisation	42.85	353.19	569.68
	Nursing charges	0	651.38	1181.25

Direct Non-Medical Costs	Physiotherapy	150	1007.44	1771.87
	Nutrition	0	840	1455
	Transportation	20.57	297.36	708.12
	Telephone	4	16.69	28.75
Indirect Costs	Morbidity	0	342.55	1721.37
	Mortality	0	0	0
Total Cost		3179.62	16549.4	43852.16

Table 3: Direct and Indirect Health Care Costs as per severity of COPD

Cost category	Stage I (mean cost in rupees per patient per hospital visit)	Stage II (mean cost in rupees per patient per hospital visit)	Stage III (mean cost in rupees per patient per hospital visit)	Stage IV (mean cost in rupees per patient per hospital visit)
Direct Medical Costs	70.0	1467.85	13061.29	31522.77
Direct Non-Medical Costs	20.0	174.57	2161.49	3963.74
Indirect Costs	10.0	0	342.55	7121.37
Total	100	1642.42	15565.33	42607.88

IV. DISCUSSION

COPD represents a high health-care burden worldwide. The increasing prevalence and life long duration of the illness in those affected translates into increased direct and indirect medical expenditures. The findings of the present study shed light on the comprehensive cost expenditure of patients with COPD. The data obtained from this study demonstrated a strong correlation between the total cost incurred by patients for COPD management and the severity of the disease and which is in concordance with those found in international literature.^{6,7}

The present study had demonstrated a positive relation between the presence of co-morbidities and an increase in the cost of illness. This is in consistent with the report given by Mary Geitona et al. which stated that there was a significant correlation between associated co-morbidities and increased cost.⁸

a) Health seeking behavior

In the present study, among all COPD patients, 87.83% seeks immediate medical help in case of any breathing discomfort while 12.7% neglected their ailment. Similar findings were reported by Grover et al. from their study.⁹ The cost of illness was found to be higher for patients in stages III and IV COPD as these patients were treated with more number of drugs both initially, during follow-up and also had more number of hospital visits due to frequent acute exacerbations, leading to greater use of diagnostic procedures which had also contributed to higher cost of illness.

The data obtained from the present study had shed light to the cost variables that contributed to the total cost of illness at different stages of COPD. In stage II COPD, biochemical investigations were the most important cost variable. In stage III & IV, costs of

hospitalization, diagnostic procedures, physician and drugs were the most important cost variables. This was due to increase in length of hospital stay and antibiotic usage in severe stages of COPD. A similar report given by Daniel E Hilleman et al.¹⁰

The increase in severity of the disease has a dramatic negative impact on the quality of life of the patients, a significant decrease with an increase in SGRQ score. A multi centre 2-year follow up study by Claudio F Donner demonstrated that repeated exacerbations resulted in a permanent negative impact on health status.¹¹

Patients with COPD experience poor physical functioning and live with distressing symptoms that require frequent hospitalization due to disease progression. They develop inability to work and may become socially isolated and often depressed. The current study had shown that the cost of illness increased as the quality of life of patients decreased. Quality of life worsened with severity of disease and with exacerbations resulting in more hospitalization and increased cost of treatment.^{12,13} The focused on the decrease in health-related quality of life with an increase in cost of therapy in COPD.

b) Cost of illness of COPD

In the present study the direct cost was found to be 91% of the total cost. Majority of the amount was spent for hospitalization, laboratory investigations, diagnostic procedures, drugs and practitioner. This is in concordant with other studies.^{6,13}

On an average a patient spent around 15379.1 Rupees per visit to the hospital. The highest being spent for hospitalization (36.2%) followed by diagnostic procedures (9.8%), laboratory investigations (9.87%), for practitioner (9.21%), morbidity (8%), drugs (4.4%) and the rest accounted for 23.5% (Table 2). Out of the total

costs, highest was on direct medical costs (81.2%) followed by indirect costs to 8.98%. The mean amount spent by patients with stage II COPD Rs.3179.62 $\pm$ 99.01 per patient per visit, stage III Rs.16414.79 $\pm$ 8365.79 and stage IV Rs.44077.16 $\pm$ 15686.21 per patient per visit. The patients with stage IV spent nearly 13 times more than stage II and 2.3 times than stage III patients. In stage II a patient spent around 3179 rupees per hospital visit; the highest was spent for laboratory investigations, followed by pulmonary function tests, diagnostic procedures, arterial blood gases, practitioner charges and the rest of the cost drivers accounting to 330 rupees. In stage III a patient spent around Rs.16549 per hospital visit; the highest was spent for hospitalization (Rs.5897). Similarly in stage IV a patient spent around Rs.43852; the highest was spent for hospitalization (Rs.19450). As the disease severity increased, the amount for the illness also increased. The severity of disease highly correlated with cost of illness. Findings are concordant with their separate studies reported by Kallaru et al and Patel et al.¹⁴⁻¹⁶

c) *Quality of life of patients with stage III and stage IV COPD*

The quality of life of inpatients was evaluated by using SGRQ. The mean SGRQ QOL score of the 115 patients was found to be 53.96 $\pm$ 10.38. The SGRQ QOL score of the stage III COPD patients was found to be 44.69 $\pm$ 9.27 and stage IV patients was 63.24 $\pm$ 11.49. As the severity of the disease increased the quality of life of COPD patients significantly decreased. Cost of the disease negatively correlated with quality of life. Quality of life was similarly found to be severely impaired in COPD patients by various studies.¹⁷⁻¹⁹

V. CONCLUSION

The study demonstrated that the total cost of illness of COPD patients increased with severity of disease. The Quality of life of the patients decreased with increase in severity of the disease. The drivers of the total cost were found to be hospitalizations and length of stay. Since acute exacerbations are the main cause of hospitalization among COPD patients, strategies to prevent severe exacerbations could be very cost effective and improve the quality of life. By developing strategies to improve patients' awareness on nicotine replacement therapy, adherence to drug therapy and opting for physical rehabilitation, the direct medical and indirect costs can be reduced which in turn will lower the burden of cost of illness of COPD.

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REFERENCES RÉFÉRENCES REFERENCIAS

1. Halbert R J, Natoli J L, Gano A, Badamgarav E, Buist A S, Mannino D M. Global burden of COPD: systematic review and meta analysis. *Euro Respir J* 2006; 28: 523-32.
2. McKay A J, Mahesh P A, Fordham J Z, Majeed A,. Prevalence of COPD in India: a systematic review. *Prim Care Respir J* 2012; 21: 313-21.
3. Jindal S K. Emergence of chronic obstructive disease as an epidemic in India. *Indian J Med Res* 2006; 124: 619-30.
4. Global initiative of chronic obstructive lung diseases. Pocket guide to COPD diagnosis, management and prevention. A guide for health care professionals 2017. Report Global Initiative for Chronic Obstructive Lung Diseases 2017: p.2.
5. Jones P W. [Home page on the internet]. St George's respiratory questionnaire Manual. [Updated 2014 February 20; cited 2014 May 15]. Available from: http://www.healthstatus.sgul.ac.uk/SGRQ_download/SGRQ%20Manual%20June%202009.pdf
6. Kallaru H, Nagasubramanian V, Balakrishnan H, Gopal K, Palani T. impact of severity of disease on cost of illness and quality of life of patients with COPD. *J Young Pharmacists* 2015; 7: 106-12.
7. Shahab L, Jarvis M, Britton J, West R, Prevalence, diagnosis and relation to tobacco dependence of chronic obstructive pulmonary diseases in a naturally representative population sample. *Thorax* 2006; 61: 1043-7.
8. Mary Geitona, Magdalini Hatzikou, Paschalis Steiropoulos, Evangelos Alexopoulos C, Demosthenes Bouros. The cost of COPD exacerbations: A university hospital – based study in Greece. *Respiratory Med.* 2010; 105(3): 402-9.
9. Patel K, Lalwani T, Shah K. Economic burden in direct cost of chronic obstructive pulmonary disease at a tertiary care teaching hospital as prospective cohort study. *Indian J Pharmacy Practice* 2014; 7: 61-8.
10. Daniel Hilleman E, Naresh Dewan, Mark Maleskar, Mitchell Friedmann. Pharmacoeconomic evaluation of COPD. *Chest* 2000; 118(5): 1278-85.
11. Claudio Donner F, Johann Christian Virchow, Mirco Vusuardi. Pharmacoeconomics in COPD and inappropriateness of diagnostics, management and treatment. *Respiratory Med.* 2011; 105(6): 828-37.
12. Seemungal T A, Donaldson G C, Paul E A, Bestall J C, Jeffries D J, Wedzicha J A. Effect of exacerbation on quality of life in patients with chronic obstructive pulmonary disease. *Am J Respir Crit Care Med.* 1998; 157(5): 1418-22.

13. Marc Miravittles, Cristina Murio, Tina Guerrero, Ramon Gisbert. Costs of chronic bronchitis and COPD. *Chest* 2003; 123(3): 784-91.
14. Patel K, Lalwani T, Shah K. Economic burden in direct cost of chronic obstructive pulmonary disease at a tertiary care teaching hospital as prospective cohort study. *Indian J Pharmacy Practice* 2014; 7: 61-8
15. Marc Miravittles, Cristina Murio, Tina Guerrero, Ramon Gisbert. Pharmacoeconomic Evaluation of acute exacerbations of chronic bronchitis and COPD. *Chest* 2002; 121(5): 1449.2 -55.
16. Ramsey S D, Sullivan S D. The burden of illness and economic evaluation for COPD. *European Respiratory Journal* 2003; 21(41): 29s-35.
17. Thakkar M, Rohan K, Jain N, Jain N Sharma M. Chronic obstructive pulmonary diseases. Does sex really matter? *Lung India* 2011; 28: 258-62.
18. Muaed Jamal Alomar D M. Risk Assessment for COPD Using CAT Questionnaire and Vitalograph COPD-6 Screening Device. *J Young Pharmacists*. 2014; 6(2): 29-34.
19. Zamzam M A, Arab N Y, Wahsh R A, Ragab A Z, Allam E M. Quality of life in COPD patients. *Egyptian J Chest Dis TB* 2012; 4:281-9.
20. Ahmed M A, Neyaz A, Aslam A N. Health related quality of life of chronic obstructive pulmonary diseases patients: Results from community based cross section study in Aligarh, UP, India. *Lung India* 2016; 33-148-53.



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Ratio of Zinc to Bromine, Iron, Rubidium, and Strontium Concentration in the Prostatic Fluid of Patients with Chronic Prostatitis

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Methods: Prostatic fluid levels of Br, Fe, Rb, Sr and Zn were prospectively evaluated in 33 patients with chronic prostatitis and also in 42 healthy males. Measurements were performed using ^{109}Cd radionuclide-induced energy dispersive X-ray fluorescent microanalysis. The results allowed values of the Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr concentration ratios to be calculated.

Results: It was observed that in the inflamed prostates the ratios of Zn/Br, Zn/Fe, and Zn/Rb significantly decreased in a comparison with those normal prostates.

Keywords: chronic prostatitis; prostatic fluid; trace element concentrations; trace element concentration ratios; energy-dispersive x-ray fluorescent analysis.

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Ratio of Zinc to Bromine, Iron, Rubidium, and Strontium Concentration in the Prostatic Fluid of Patients with Chronic Prostatitis

Vladimir Zaichick ^α & Sofia Zaichick ^ο

Abstract- Introduction: The absence of robust and unambiguous diagnostic markers may at the present time allow the symptoms of chronic prostatitis to overlap with those of other conditions. The aim of this study was to evaluate whether significant changes in the ratios of Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr concentrations in prostatic fluid can aid in the recognition of an inflamed prostate.

Methods: Prostatic fluid levels of Br, Fe, Rb, Sr and Zn were prospectively evaluated in 33 patients with chronic prostatitis and also in 42 healthy males. Measurements were performed using 109Cd radionuclide-induced energy dispersive X-ray fluorescent microanalysis. The results allowed values of the Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr concentration ratios to be calculated.

Results: It was observed that in the inflamed prostates the ratios of Zn/Br, Zn/Fe, and Zn/Rb significantly decreased in a comparison with those normal prostates.

Conclusion: The alterations in levels of Zn/Br, Zn/Fe, and Zn/Rb in the fluid of inflamed prostates indicate involvement of these trace elements in the etiology and pathogenesis of chronic prostatitis. It is therefore supposed that the appropriate changes of the ratios of Zn/Br, Zn/Fe, and Zn/Rb in prostatic fluid samples can be used as markers of chronic prostatitis.

Keywords: chronic prostatitis; prostatic fluid; trace element concentrations; trace element concentration ratios; energy-dispersive x-ray fluorescent analysis.

1. INTRODUCTION

The prostate gland is subject to various disorders and of them chronic prostatitis (CP) is a complex disease. CP causes a range of symptoms including pain, urinary problems, such as urgency and frequency, reduced quality of life and sexual dysfunction. About 35–50% of men are reported to be affected by symptoms suggesting CP during their lifetime (1,2). Etiology of CP is not fully understood and treatment is frequently unsuccessful (3,4). Fragmentary epidemiological evidence indicates that risk factors such as infection, autoimmunity, inflammation, excessive amounts of tumor-related proteins, imbalance of hormones and nutrition-related variables, including some trace elements (TE) as micronutrients, may be associated with CP (5). CP is characterized by a

multifactorial pathogenesis, and the condition is defined on the basis of clinical presentation rather than clear diagnostic markers or findings (6). The absence of robust and unambiguous diagnostic markers may cause the CP symptoms to overlap with those of other conditions, such as benign prostatic hyperplasia and prostate and cancer (7).

Oxidative stress has significant involvement in the pathogenesis of CP (8). Oxidative stress is a result of the imbalance between reactive oxygen species and antioxidants, including some TE, in the body that can cause tissue and organ damage. TE, besides their antioxidant properties, have many other essential physiological functions such as maintenance and regulation of cell function, gene regulation, activation or inhibition of enzymatic reactions, and regulation of membrane function. Essential or toxic (mutagenic, carcinogenic) properties of TE depend on tissue-specific need or tolerance, respectively (9,10). Besides the total amounts of individual TE, ratios of several TE should be taken into account to allow for a more reliable description of both the individual TE and health status (9,11).

In our previous studies a significant involvement of Zn, 32 Ca, Mg, Rb and some other TE in the functions of the prostate were studied. (12-22). One of the main functions of the prostate gland is the production of prostatic fluid (23). It contains a high concentration of Zn and elevated levels of Ca, Mg, Rb, and some other TE in comparison with those in serum and other fluids of the human body.

The first finding of remarkably high levels of Zn in human expressed prostatic fluid (EPF) was reported in the early 1960s (24). After analyzing EPF expressed from the prostates of 8 apparently healthy men aged 25-55 years it was found that Zn concentrations varied from 300 to 730 mg/L. After this finding several investigators have suggested that the measurement of Zn levels in EPF may be useful as a marker of abnormal prostate secretory function (25, 26). It promoted more detailed studies of the Zn concentrations in the EPF of healthy subjects and in those with different prostatic diseases, including CP (26, 27). A detailed review of these studies, reflecting the contradictions within accumulated data, was given in our earlier publication (27). Moreover, the method and apparatus for micro

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analysis of Br, Fe, Rb, Sr, and Zn in the EPF samples using energy dispersive X-ray fluorescence (EDXRF) activated by radiation from the radionuclide source ^{109}Cd was developed by us (28).

Thus, data on changes of TE content in EPF of patients with CP are very important, because this can clarify our knowledge of CP pathogenesis and may prove useful as CP diagnostic markers. In the present study it was supposed that apart from total amounts of TE the ratios of Zn to some other TE content in EPF are likely to reflect a disturbance of prostate function. To our knowledge there are no published data on TE ratios in prostatic fluids.

This work had three aims. The first aim was to assess the Br, Fe, Rb, Sr, and Zn concentrations in the EPF samples obtained from apparently healthy persons and patients with CP using the ^{109}Cd EDXRF micro method. The second aim was to evaluate the quality of these results and to compare them with published data. The last aim was to calculate the Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios and compare their values with those obtained from EPF samples from normal and inflamed prostate glands. All studies were approved by the Ethical Committees of the Medical Radiological Research Centre, Obninsk. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or 75 national research committee and with the 1964 Helsinki declaration and its later amendments, or with comparable ethical standards.

II. MATERIAL AND METHODS

Specimens of EPF were obtained from 42 men with apparently normal prostates (mean age $\pm$ Standard Deviation - 54 ± 13 years, range 31-75 years) and from 33 males with CP (mean age 50 ± 9 years, range 37-65 years) in the Urological Department of the Medical Radiological Research Centre using standard rectal massage procedure. The diagnosis of CP was made by qualified urologists and in all cases the CP diagnosis was confirmed by clinical examination and by cytological and bacteriological investigations of the EPF samples. Subjects were asked to abstain from sexualinter course for three days preceding the procedure. Specimens of EPF were obtained in sterile containers which were appropriately labeled. Twenty μL (microliters) of fluid were taken in duplicate by micropipette from every specimen for TE analysis, while the rest of the fluid was used for cytological and bacteriological investigations. One 20 μL sample of the EPF was dropped on a 11.3 mm diameter disk made of thin, ash-free filter paper fixed on pieces of Scotch tape pieces and dried in an exsiccator at room temperature. Then the dried sample was covered with a 4 mm Dacron film and centrally pulled onto a Plexiglas cylindrical frame (28).

To determine concentration of the TE by comparison with known standard, aliquots of solutions of commercial, chemically pure compounds were used for calibration (29). The standard samples for calibration were prepared in the same way as the samples of prostate fluid. Because there were no available liquid Certified Reference Materials (CRM) ten sub-samples of the powdered CRM IAEA H-4 (animal muscle) were analyzed to estimate the precision and accuracy of results. Every CRM sub-sample weighing about 3 mg was applied to the piece of Scotch tape serving as an adhesive fixing backing. An acrylic stencil made in the form of a thin-walled cylinder with 11.3mm inner diameter was used to apply the sub-sample to the Scotch tape. The polished-end acrylic pestle which is a constituent of the stencil set was used for uniform distribution of the sub-sample within the Scotch tape surface restricted by the stencil inner diameter. When the sub-sample was slightly pressed to the Scotch adhesive sample, the stencil was removed. Then the sub-sample was covered with 4 mm Dacron film. Before the sample was applied, pieces of Scotch tape and Dacron film were weighed using an analytical balance. They were reweighed after the sample had been placed inside to determine the sub- sample mass precisely.

The facility for the radionuclide-induced energy dispersive X-ray fluorescence included an annular ^{109}Cd source with an activity of 2.56 GBq, ASi (Li) detector with an electric cooler and a portable multi-channel analyzer combined with a PC, comprised the detection system. Its resolution was 270eV at the 6.4 keV line. The facility functioned as follows. Photons with energy 22.1 keV from the ^{109}Cd source arrive at the surface of the specimen inducing the fluorescent Ka X-rays from TE. The fluorescence reaches the detector after passing through a 10 mm diameter collimator. Then the X-ray's arrival is recorded. The duration of the measurements of Br, Fe, Rb, Sr, and Zn concentration for each sample was 60 min. The intensity of Ka-line of Br, Fe, Rb, Sr, and Zn for EPF samples and standards was estimated from a calculation the total area under the corresponding photo peak in the spectra.

All EPF samples for EDXRF were prepared in duplicate and mean values of TE contents were used in the final calculation. Using the Microsoft Office Excel programs, the summary of statistics, arithmetic mean, standard deviation, standard error of mean, minimum and maximum values, median, percentiles with 0.025 and 0.975 levels was calculated for TE concentrations and the Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in the EPF of normal and CP prostates. The difference in the results between the two groups of samples (normal prostate and CP) was evaluated by the parametric Student's t-test and non-parametric Wilcoxon-Mann-Whitney U-test.

III. RESULTS

Table 1 depicts our data for Br, Fe, Rb, Sr, and Zn mass fractions in ten sub-samples of certified reference material (CRM) IAEA H-4 (animal muscle) and the certified values of this material.

Table 1: EDXRF data of Br, Fe, Rb, Sr, and Zn contents in the CRM IAEA H-4 (animal muscle) reference material compared to certified values (mg/kg, dry mass basis)

Element	Certified values			This work
	Mean	95% confidence interval	Type	M±SD
Fe	49	47 - 51	C	48±9
Zn	86	83 - 90	C	90±5
Br	4.1	3.5 - 4.7	C	5.0±1.2
Rb	18	17 - 20	C	22±4
Sr	0.1	-	N	<1
Mean – arithmetical mean, SD – standard deviation, C- certified values, N – non-certified values.				

The contents of four TE (Br, Fe, Rb, and Zn) were determined. These TE have certified values for the CRM IAEA H-4 (animal muscle) (Table 1). Mean values (M±SD) for Br, Fe, Rb, and Zn were in the range of the 95% confidence interval. Good agreement of the TE contents analyzed by 109Cd radionuclide-induced EDXRF with the certified data of CRM IAEA H-4 (Table 1) indicate an acceptable accuracy of the results obtained

Table 2: Some basic statistical parameters of Br, Fe, Rb, Sr, and Zn concentration (mg/L) and Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr concentration ratios in prostate fluid of healthy men and patients with chronic prostatitis

Condition of prostate	Element or ratio	M	SD	SEM	Min	Max	Median	Per. 0.025	Per. 0.975
Norm 31-75 years n=42	Br	2.81	2.88	0.57	0.490	8.53	1.26	0.496	8.53
	Fe	8.29	7.49	1.37	1.27	39.8	7.47	1.29	22.9
	Rb	1.15	0.51	0.09	0.376	2.45	1.05	0.424	2.38
	Sr	1.17	0.83	0.16	0.400	3.44	1.15	0.400	3.19
	Zn	559	204	32	253	948	549	254	941
	Zn/Br	624	603	118	43	1882	374	48	1882
	Zn/Fe	117	96	18	13.0	343	77.0	17.0	343
	Zn/Rb	628	369	67	119	1612	534	196	1513
	Zn/Sr	750	539	104	155	2321	619	167	2015
Prostatitis 37-65 years n=33	Br	3.35	2.64	0.69	0.120	9.85	2.98	0.201	8.73
	Fe	10.9	9.6	2.3	3.85	41.9	6.97	4.06	35.6
	Rb	2.32	1.13	0.30	0.730	4.54	1.75	0.935	4.34
	Sr	1.57	1.36	0.79	0.210	2.93	1.58	0.279	2.86
	Zn	382	275	48	62.0	1051	295	75.0	950
	Zn/Br	129	96	32	14.1	322	103	20.2	298
	Zn/Fe	35.9	20.6	5.3	7.03	66.3	33.7	9.12	66.0
	Zn/Rb	175	101	29	41.3	381	154	48.8	367
	Zn/Sr	484	732	422	34.6	1329	88.2	37.3	1267

M - Arithmetic mean, SD – Standard deviation, SEM – Standard error of mean, Min – Minimum value, Max – Maximum value, Per. 0.025 – Percentile with 0.025 level, Per. 0.975 – Percentile with 0.975 level.

in the study of the prostatic fluid presented in Tables 2-4.

Table 2 presents certain statistical parameters (arithmetic mean, standard deviation, standard error of mean, minimal and maximal values, median, percentiles with 0.025 and 0.975 levels) of the Br, Fe, Rb, Sr, and Zn concentrations as well as of the Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in EPF of normal and CP prostates.

The comparison of our results with published data for Br, Fe, Rb, Sr, and Zn concentrations and also for the Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in EPF of normal and CP prostate. [26, 27, 30-32] is shown in Table 3.

The ratios of means and the differences between mean values of Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in EPF of normal and CP prostates are presented in Table 4.

Discussion

The mean values and all selected statistical parameters were calculated for five TE (Br, Fe, Rb, Sr, Zn) concentrations and four TE ratios (Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr) ratios (Table 2).

The mean of Zn concentration obtained for normal prostate fluid, as shown in Table 3, agrees well with median of means cited by other researches (26, 27, 30-32). The mean of Rb concentration obtained for EPF agrees well with our data reported 37 years ago (26). No published data referring to Br, Fe, and Sr concentrations as well as to the ratios Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in EPF of normal prostates were found.

Table 3: Median, minimum and maximum value of means of Fe, Zn, Br, Rb, and Sr concentration(mg/L) as well as of Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr ratio in prostate fluid of health men and patients with prostatitis according to data from the literature

Condition	Element or ratio	Published data [Reference]			This work results
		Median of means (n)*	Minimum of means M or M±SD, (n)**	Maximum of means M±SD, (n)**	M±SD
Norm	Br	-	-	-	2.81±2.88
	Fe	-	-	-	8.29±7.49
	Rb	1.11 (1)	1.11±0.57 (15) [26]	1.11±0.57 (15) [26]	1.15±0.51
	Sr	-	-	-	1.17±0.83
	Zn	453 (19)	47.1(-) [30]	5185±3737 (10) [31]	559±204
	Zn/Br	-	-	-	624±603
	Zn/Fe	-	-	-	117±96
	Zn/Rb	-	-	-	628±369
Prostatitis	Zn/Sr	-	-	-	750±539
	Br	-	-	-	3.35±2.64
	Fe	-	-	-	10.9±9.6
	Rb	2.26 (1)	2.26±1.28 (18) [26]	2.26±1.28 (18) [26]	2.32±1.13
	Sr	-	-	-	1.57±1.36
	Zn	222 (7)	88.9 (29) [32]	564±239 (10) [31]	382±275
	Zn/Br	-	-	-	129±96
	Zn/Fe	-	-	-	35.9±20.6
	Zn/Rb	-	-	-	175±101
	Zn/Sr	-	-	-	484±732

M - Arithmetic mean, SD – Standard deviation, (n)* – Number of all references, (n)** - Number of samples.

Table 4: Comparison of mean values (M±SEM) of Fe, Zn, Br, Rb, and Sr concentrations (mg/L) as well as of Zn/Br, Zn/Fe, Zn/Rb, and Zn/Sr ratios in prostate fluid of healthy men and patients with chronic prostatitis

Element or ratio	Age groups				Ratios
	Norm	Prostatitis	Student t-test p ≤	U-test* p	Prostatitis to Norm
Br	2.81±0.57	3.35±0.69	0.546	>0.05	1.19
Fe	8.29±1.37	10.9±2.3	0.342	>0.05	1.31
Rb	1.15±0.09	2.32±0.30	0.0021	<0.01	2.02
Sr	1.17±0.16	1.57±0.79	0.662	>0.05	1.34
Zn	559±32	382±48	0.0030	<0.01	0.68
Zn/Br	624±118	129±32	0.00037	<0.01	0.21
Zn/Fe	117±18	35.9±5.3	0.00016	<0.01	0.31
Zn/Rb	628±67	175±29	0.0000004	<0.01	0.28
Zn/Sr	750±104	484±422	0.596	>0.05	0.65

M – Arithmetic mean, SEM – Standard error of mean, *Wilcoxon-Mann-Whitney U-test, bold – Significant difference (p<0.05).

In the EPF samples of CP prostates our results were comparable with published data for Zn concentrations (Table 3). No published data referring to Br, Fe, Rb, and Sr concentrations, as well as to Zn/Br, Zn/Fe, Zn/Rb, Zn/Sr ratios in EPF samples obtained from patients with CP, were found.

In the cited literature a number of values for Zn concentrations in normal EPF were not expressed on a wet mass basis. Therefore, we calculated these values using the published data for water –93.2% (33).

From Table 4, it is observed that in the EPF of CP prostates the ratios of Zn/Br, Zn/Fe, and Zn/Rb are

almost 5, 3, and 4 times, respectively, lower than levels of these ratios in EPF of normal prostates.

The range of means of Zn concentration reported in the literature for normal EPF (from 47.1 to 5185 mg/L) and for EPF of untreated CP prostate (from 88.9 to 564 mg/L) varies widely (Table 3). This can be explained by a dependence of Zn content on many factors, including age, ethnicity, mass of the gland, presence of benign prostatic hyperplasia, and others. These factors were not controlled in the cited studies. Another and, in our opinion, leading cause of inter observer variability was insufficient quality control of

results in these studies. In many reported papers EPF samples were dried at high temperature or with acid digestion. There is evidence that by use of these treatment methods some quantities of trace elements, including Zn, are lost as a result of this treatment (34-36).

Characteristically, elevated or deficient levels of TE and electrolytes observed in EPF are discussed in terms of their potential role in etiology of diseases. In our opinion, abnormal levels of some TE and their ratios in EPF of CP prostate could be the consequence of inflammation. Compared to other fluids of the human body, the prostate secretion contains higher levels of Zn and some other TE. These data suggest that these TE could be involved in functional aspects of the prostate. Inflammation is accompanied by a suppression of specific functional activities of prostatic cells, which leads to a small reduction in the Zn content in EPF. Why Br, Fe, Sr, and particularly Rb content increase in the EPF of CP prostate and how it acts on the gland are still to be fully understood.

Our findings show that the concentration of Br, Fe, Sr, and particularly Rb increased whereas the concentration of Zn is somewhat decreased in the EPF of CP prostate as compared to their levels in EPF of normal prostates (Table 4). Our present results have formed the basis for a new method for diagnosis of CP, the essence of which will be evaluation of the ratios of TE content, which in EPF have changed in different directions during prostatic inflammation. In other words, it is plausible to assume that levels of such TE ratios in EPF as Zn/Br, Zn/Fe, and Zn/Rb in EPF can be used as CP markers.

This study has several limitations. Firstly, analytical techniques employed in this study measure only five TE (Br, Fe, Rb, Sr and Zn) concentrations in EPF. Future studies should be directed toward using additional analytical methods which will extend the list of TE investigated in the EPF of normal and inflamed prostates. Secondly, the sample size of CP group was relatively small. It did not allow us to carry out the investigations of TE contents in a sufficiently large CP group, which could investigate differentials like age, dietary habits of healthy persons and patients with CP, and other patient characteristics. Despite these limitations, this study provides some unequivocal evidence on inflammation -specific Zn/Br, Zn/Fe, and Zn/Rb ratio alterations in the EPF and shows the necessity to extend TE ratio research of EPF in normal prostates and prostatic diseases, along the lines we have indicated.

IV. CONCLUSION

In this work, TE measurements were carried out in the EPF samples of normal and CP prostates using the non-destructive instrumental EDXRF micro method

developed by us. It was shown that this method is an adequate analytical tool for the non-destructive determination of Br, Fe, Rb, Sr, Zn concentration and also ratios of some of these TE in the EPF samples of human prostates. It was observed that in the EPF of CP prostates the ratios of Zn/Br, Zn/Fe, and Zn/Rb decreased in a comparison with those in the EPF of normal prostates. In our opinion, the observed alterations in levels of Zn/Br, Zn/Fe, and Zn/Rb ratios in the EPF of inflamed prostates demonstrate an involvement of these trace elements in the etiology and pathogenesis of CP. So it is presumed that the changes in the Zn/Br, Zn/Fe, and Zn/Rb ratios in the EPF samples can be used as markers of the presence of CP.

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REFERENCES RÉFÉRENCES REFERENCIAS

1. Krieger J N, Lee S W, Jeon J, et al. Epidemiology of prostatitis. *Int J Antimicrob Agents* 2008; 31 (Supl. 1): S85-90.
2. Pavone-Macaluso M. Chronic prostatitis syndrome: a common, but poorly understood condition. Part I. *EAU-EBU Update Ser* 2007; 5: 1-15.
3. Nickel J C. Prostatitis. *Can UrolAssoc J* 2011; 5(5): 306-15.
4. Pavone-Macaluso M. Chronic prostatitis syndrome: a common, but poorly understood condition. Part I. *EAU-EBU Update Ser* 2007; 5: 1-15.
5. Chen Y, Li J, Hu Y, et al. Multi-factors including inflammatory/immune, hormones, tumor-related proteins and nutrition associated with chronic prostatitis NIH IIIa+b and IV based on FAMHES project. *Scientific Reports* 2017; 7: Article number 9143. Available from: <https://www.nature.com/articles/s41598-017-09751-8>
6. Vicari E, Salemi M, Sidoti G, et al. Symptom severity following Rifaximin and the Probiotic VSL#3 in patients with chronic pelvic pain syndrome (due to inflammatory prostatitis) plus irritable bowel syndrome. *Nutrients* 2017; 9(11) doi: 10.3390/nu9111208.
7. Rees J, Abrahams M, Doble A, Cooper A. Diagnosis and treatment of chronic bacterial prostatitis and chronic prostatitis/chronic pelvic pain syndrome: a consensus guideline. *BJU Int* 2015; 116(4): 509-25.
8. Ihsan A U, Khan F U, Khongorzul P, et al. Role of oxidative stress in pathology of chronic prostatitis/chronic pelvic pain syndrome and male

- infertility and antioxidants function in ameliorating oxidative stress. *Biomed Pharmacother* 2018; 106: 714-23.
9. Zaichick V. Medical elementology as a new scientific discipline. *J Radioanal Nucl Chem* 2006; 269: 303-9.
10. Ekmekcioglu C. The role of trace elements for the health of elderly individuals. *Nahrung* 2001; 45: 309-16.
11. Bornhorst J, Kipp A P, Haase H, et al. The crux of inept biomarkers for risks and benefits of trace elements. *Trends in Analytical Chemistry* 2018; 104: 183-90.
12. Zaichick V. INAA and EDXRF applications in the age dynamics assessment of Zn content and distribution in the normal human prostate. *J Radioanal Nucl Chem* 2004; 262: 229-34.
13. Zaichick V, Zaichick S. The effect of age on Br, Ca, Cl, K, Mg, Mn, and Na mass fraction in pediatric and young adult prostate glands investigated by neutron activation analysis. *Appl Radiat Isot* 2013; 82: 145-51.
14. Zaichick V, Zaichick S. INAA application in the assessment of Ag, Co, Cr, Fe, Hg, Rb, Sb, Sc, Se, and Zn mass fraction in pediatric and young adult prostate glands. *J Radioanal Nucl Chem* 2013; 298(3): 1559-66.
15. Zaichick V, Zaichick S. NAA-SLR and ICP-AES Application in the assessment of mass fraction of 19 chemical elements in pediatric and young adult prostate glands. *Biol Trace Element Res* 2013; 156(1): 357-66.
16. Zaichick V, Zaichick S. Use of neutron activation analysis and inductively coupled plasma mass spectrometry for the determination of trace elements in pediatric and young adult prostate. *American Journal of Analytical Chemistry* 2013; 4: 696-706.
17. Zaichick V, Zaichick S. Relations of bromine, iron, rubidium, strontium, and zinc content to morphometric parameters in pediatric and nonhyperplastic young adult prostate glands. *Biol Trace Element Res* 2014; 157(3): 195-204.
18. Zaichick V, Zaichick S. Relations of the neutron activation analysis data to morphometric parameters in pediatric and nonhyperplastic young adult prostate glands. *Advances in Biomedical Science and Engineering* 2014; 1(1): 26-42.
19. Zaichick V, Zaichick S. Relations of the Al, B, Ba, Br, Ca, Cl, Cu, Fe, K, Li, Mg, Mn, Na, P, S, Si, Sr, and Zn mass fractions to morphometric parameters in pediatric and nonhyperplastic young adult prostate glands. *BioMetals* 2014; 27(2): 333-48.
20. Zaichick V, Zaichick S. The distribution of 54 trace elements including zinc in pediatric and nonhyperplastic young adult prostate gland tissues. *Journal of Clinical and Laboratory Investigation Updates* 2014; 2(1): 1-15.
21. Zaichick V, Zaichick S. Androgen-dependent chemical elements of prostate gland. *Androl Gynecol: Curr Res* 2014; 2: 2.
22. Zaichick V, Zaichick S. Differences and relationships between morphometric parameters and zinc content in nonhyperplastic and hyperplastic prostate glands. *BJMMR* 2015; 8(8): 692-706.
23. Zaichick V. The prostatic urethra as a Venturi effect urine-jet pump to drain prostatic fluid. *Med Hypotheses* 2014; 83: 65-68.
24. Mackenzie A R, Hall T, Whitmore W F Jr. Zinc content of expressed human prostate fluid. *Nature (London)* 1962; 193(4810): 72-3.
25. Marmar J L, Katz S, Praiss D E, DeBenedictis T J. Values for zinc in whole semen, fraction of split ejaculate and expressed prostatic fluid. *Urology* 1980; 16(5): 478-80.
26. Zaichick V, Tsyb A, Dunchik VN, Sviridova TV. Method for diagnostics of prostate diseases. Certificate of invention No 997281 (30.03.1981), 1981, Russia.
27. Zaichick V, Sviridova T, Zaichick S. Zinc concentration in human prostatic fluid: normal, chronic prostatitis, adenoma, and cancer. *Int Urol Nephrol* 1996; 28(5): 687-94.
28. Zaichick V, Zaichick S, Davydov G. Method and portable facility for measurement of trace element concentration in prostate fluid samples using radionuclide-induced energy-dispersive X-ray fluorescent analysis. *Nuclear Science and Techniques* 2016; 27(6): 1-8.
29. Zaichick V. Applications of synthetic reference materials in the medical Radiological Research Centre. *Fresenius J Anal Chem* 1995; 352: 219-23.
30. Burgos M N. Biochemical and functional properties related to sperm metabolism and fertility. In: Brandes D, editor. *Male accessory sex organs*. New York: Academic Press; 1974: 151-60.
31. Gómez Y, Arocha F, Espinoza F, Fernandez D, Vásquez A, Granadillo V. Niveles de zinc en líquido prostático de pacientes con patologías de próstata. *Invest Clin* 2007; 48(3): 287-94.
32. Kavanagh J P, Darby C. The interrelationships between acid phosphatase, aminopeptidase, diamine oxidase, citric acid β -glucuronidase, pH and zinc in human prostate fluid. *Int J Androl* 1982; 5(5): 503-12.
33. Huggins C, Scott W., Heinen J H. Chemical composition of human semen and of the secretion of the prostate and seminal vesicles. *Amer J Physiol* 1942; 136(3): 467-73.
34. Zaichick V. Sampling, sample storage and preparation of biomaterials for INAA in clinical medicine, occupational and environmental health. In: *Harmonization of Health-Related Environmental*

Measurements Using Nuclear and Isotopic Techniques. Vienna: IAEA; 1997: 123-33.

35. Zaichick V, Zaichick S. A search for losses of chemical elements during freeze-drying of biological materials. J Radioanal Nucl Chem 1997; 218(2): 249-53.
36. Zaichick V. Losses of chemical elements in biological samples under the dry aching process. Trace Elements in Medicine 2004; 5(3): 17-22.



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Assessment of Knowledge and Associated Risk Factors Regarding Zoonotic Disease among Community Members of Siddharthanagar Municipality, Bhairahawa, Rupandehi

By Subash Rimal, Asmita Shrestha, Rabina Ghimire & Dr. Arjun Chapagain

Tribhuvan University

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Keywords: survey, zoonoses, siddharthanagar, veterinary teaching hospital, bhairahawa.

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Subash Rimal ^α, Asmita Shrestha ^σ, Rabina Ghimire ^ρ & Dr. Arjun Chapagain ^ω

Abstract- Zoonoses are the common cause of disease occurrence in animals and humans in Bhairahawa. Many zoonotic disease such as Tuberculosis, Rabies, Heartworm, Brucella, Leptospira has been encountered in Veterinary Teaching Hospital, Institute of Agriculture and Animal Science (IAAS), Tribhuvan University from Bhairahawa periphery. We conducted a cross-sectional purposive random survey of total 303 villagers of Siddharthanagar Municipality, Bhairahawa, Rupandehi to study awareness status about zoonosis. Out of total individuals interviewed, 176 (58%) heard about the zoonotic disease and radio/television (37.5%) were the source of information. 66.7% female and 56.9% male knew about zoonosis. 72.9% of youths (30-50 years), 36.6% farmers, 33.33% Dalit and 40.2% Madheshi, 58.6% Hindu, 66.7% Buddhist, 66.7% of Christian knew about zoonosis. 86% of aware people knew about direct transmission route of zoonotic disease, and 100%, 77.84%, 100%, 100% and 47.72% respondents knew about the contaminated food, milk, meat, bite, and secretion transmission route respectively. Age, education, ethnicity, occupation play highly significant ($P < 0.05$) effect on zoonosis, where religion had significant ($P < 0.05$) effect but sex had no significant relationship. Hence our study suggests that zoonotic disease pose a threat to people but the risk grossly underestimated.

Keywords: survey, zoonoses, siddharthanagar, veterinary teaching hospital, bhairahawa.

1. INTRODUCTION

a) Background

Zoonoses caused by infection that spread between animal and people. Of the known pathogen species implicated in human disease, 61% are zoonotic. Comparatively neglected among this vast group of pathogens are endemic zoonoses. Many endemic zoonoses not only cause considerable human disability but also impair livestock productivity, imposing multiple burdens on poor communities. Developing and under developed countries are being comparatively more affected by these zoonotic diseases due to lack of proper education on zoonoses, awareness, and improper management of farms (Chowdhury et. al., 2018). And this situation is alarming.

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In context of Nepal, people are mainly dependent on the animal and the animal husbandry practice as their source of an income, and there is a very close association of animals with humans. Many people interact with the animals in their daily lives, both at home and away from home. Pets offer companionship and entertainment, with millions of households having one or more pets. We might come into close contact with the animals at a county fair or petting zoo, or encounter wildlife while enjoying outdoor activities. Also, livestock animals are an important food source for human and provide meat, dairy and eggs. Because of the close connection between people and animals, numbers of diseases transfer from animal to human and vice-versa. But in Nepal due to risk factors such as lack of awareness, education, poverty, large populations are unknown about zoonotic disease.

b) Statement of problem

Zoonoses are the common cause of disease occurrence in animals and humans in Bhairahawa. There are large numbers of dog bites cases admitted to veterinary hospitals as well as a human hospital of Bhairahawa. Rabies, Tuberculosis, Brucellosis, Echinococcosis, Heartworm, Leptospirosis are most zoonoses encountered on Veterinary Teaching Hospital, IAAS Paklihawa. These all disease has zoonotic importance, but many people are unknown about these diseases which have a high risk of transmission. The exact status of zoonotic disease and its consequences have not been access in Nepal. Since humans share their environment with animals, it was decided to study the level of awareness among humans regarding some of the zoonotic diseases spread by animals.

c) Rationale of study

The major rationale of this study is to assess the level of awareness among the farmers, risk factors associated with the zoonoses and concerned personnel. This study also aims to assess the zoonotic risks associated with infected animals and help to make policy about awareness of zoonoses because this study provides status and conditions of awareness about zoonoses around the Bhairahawa periphery.

d) Objectives

i. General objectives

To assess the knowledge and associated risk factors regarding the zoonotic disease among community members of Siddharthanagar Municipality, Bhairahawa, Rupandehi.

ii. Specific objectives

- To assess the effect of sex, age, ethnicity, education on zoonoses.
- To assess the mode of transmission and other factors in zoonoses.

II. METHODS AND METHODOLOGY

a) Study area

Siddharthanagar (formerly Bhairahawa) municipality is the administrative headquarter of Rupandehi District on the Outer Terai plains of Nepal, 265 km (165 mi) west of Kathmandu Nepal's capital. It is also the "Gateway of Lumbini." Lumbini, the birthplace of Gautama Buddha is 25 km to the west. It borders India, Sonauli in Maharajganj district of Uttar Pradesh. This study were conducted at Bhairahawa periphery, Siddharthanagar Municipality, Rupandehi Nepal.

b) Study design

A cross-sectional purposive sampling was conducted with irrespective of; age, sex, cast, were done by stratified random sampling method.

c) Sample size

The Sample size were estimated by using ausvetEpitools epidemiological calculators assuming:

Estimated Proportion=0.3, Desired precision of estimate= 0.05, Confidence level= 0.95 and Population size of Siddharthanagara municipality was 163483 in 2011. By this way, the sample size was 323, but only 303 villagers were selected in the study.

d) Methods

A total of 303 villagers were selected randomly from Siddharthanagar Municipality, Bhairahawa, Nepal and interviewed with a questionnaire containing both open- and close-ended questions on various aspects of zoonotic diseases and test their knowledge and awareness about zoonotic diseases. The questionnaire contains general zoonoses knowledge; reported a recent experience of zoonoses cases; knowledge of signs and symptoms of selected zoonoses in humans and animals; knowledge of zoonoses transmission; and testing, prevention, and treatment practices, etc. The section assessing knowledge of disease symptoms and signs consisted of a series of closed (yes/no response) questions asking whether a particular symptom or sign was commonly associated with each disease. Listed symptoms and signs included those commonly associated with each named disease as well as others not typically associated with any of these diseases.

III. STATISTICAL ANALYSIS

The data were collected, coded and tested by using SPSS-tools and were analyzed by chi-square test and descriptive analysis was done by using MS-excel.

IV. RESULT

Total 303 individuals of Siddharthanagar Municipality, Rupandehi were interviewed for assessing the knowledge and associated risk factors regarding zoonotic disease among community members of Siddharthanagar Municipality, Bhairahawa, Rupandehi.

a) Descriptive Analysis

i. Heard about zoonosis and their source of knowledge

Out of total individuals interviewed 176 (58%) have heard about zoonotic disease whereas 127 (42%) have not.

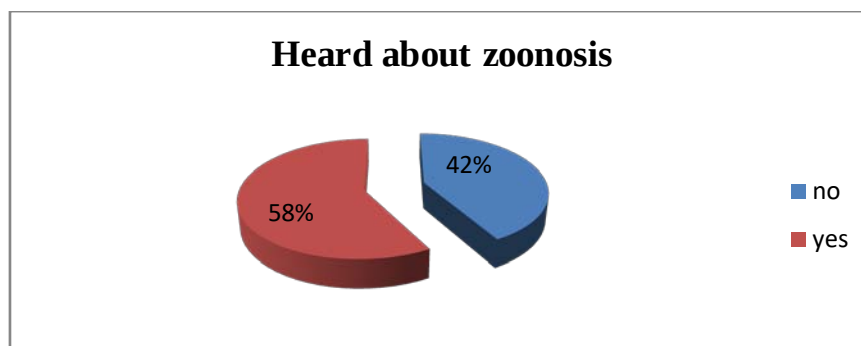


Fig. 1: Status of people who have heard about zoonosis

Among the individuals who have heard about zoonosis, 66 (37.5%) have it from Radio/TV, six from printed materials, 13 have from both Radio/TV and printed materials and six from more than two sources above.

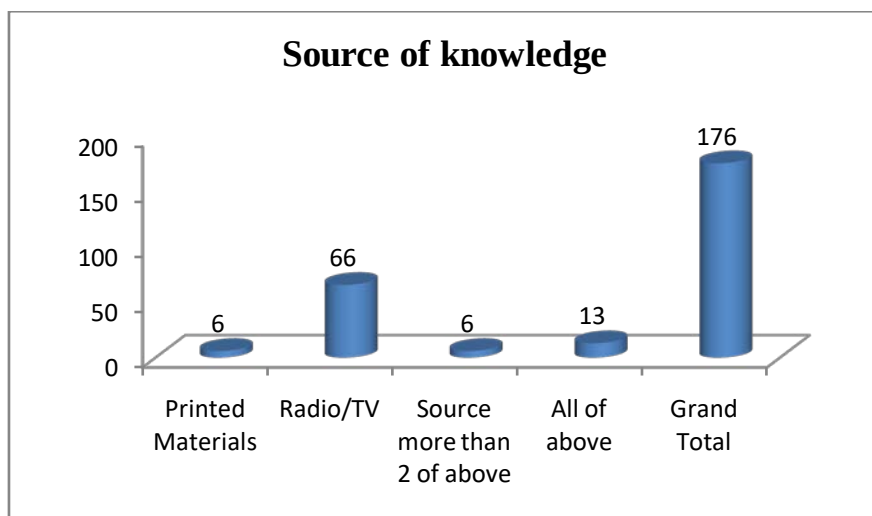


Fig. 2: Source of knowledge in individuals who have heard about zoonosis

- ii. Age
- Individuals of age group 30-50 years were mostly interviewed. Among them, 72.9% know about zoonotic disease followed by individuals of age group 16-30 years, i.e., 71.8% with least knowledge in individuals of age group 50-70 years.

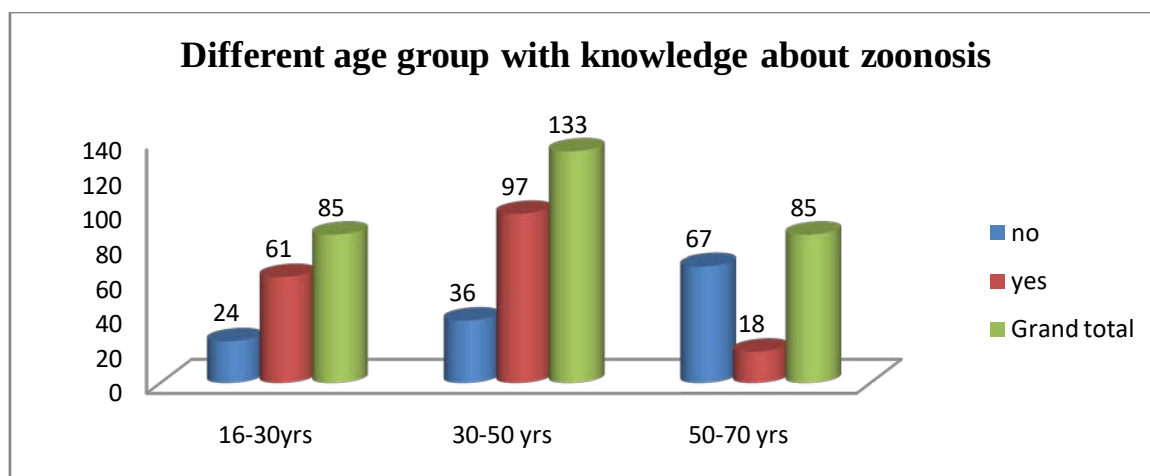


Fig. 3: Different age group with knowledge about zoonosis

Table 1: Different age group with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Age of respondent	16-30 yrs	% Within age of respondent	71.8%	28.2%	100.0%
	30-50 yrs	% Within age of respondent	72.9%	27.1%	100.0%
	50-70 yrs	% Within age of respondent	21.2%	78.8%	100.0%

- iii. Gender

267 male and 36 female were interviewed. Among total males, 152 (56.9%) have heard about zoonosis, and among total females, 24 (66.7%) have heard about it.

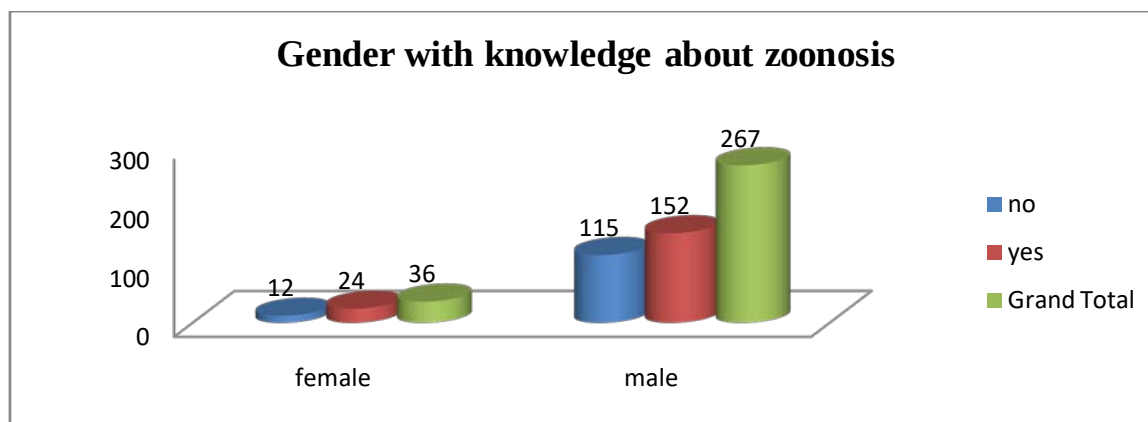


Fig. 4: Gender with knowledge about zoonosis

Table 2: Gender with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Gender of respondent	Male	Count	152	115	267
		% within gender of respondent	56.9%	43.1%	100.0%
	Female	Count	24	12	36
		% within gender of respondent	66.7%	33.3%	100.0%

iv. Occupation

People involved in agriculture (115/303) were mostly interviewed. However, only 42 (36.5%) have heard about zoonosis.

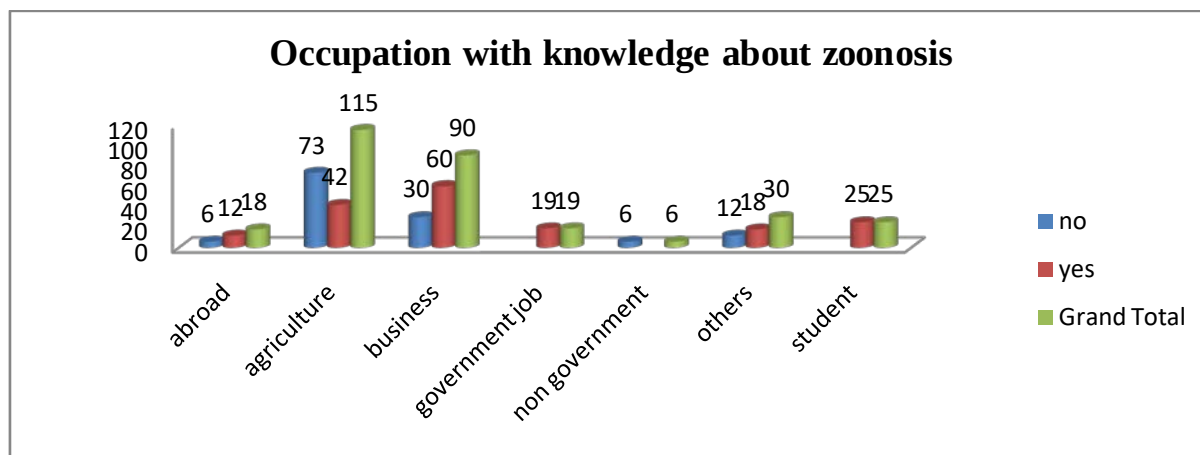


Fig. 5: Occupation with knowledge about zoonosis

Table 3: Occupation with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Occupation of Respondent	Agriculture	Count	42	73	115
		% within occupation of respondent	36.5%	63.5%	100.0%
	Business	Count	60	30	90
		% within occupation of respondent	66.7%	33.3%	100.0%
	Government Job	Count	19	0	19
		% within occupation of respondent	100.0%	0.0%	100.0%
	Non Government	Count	0	6	6
		% within occupation of respondent	0.0%	100.0%	100.0%
	Abroad	Count	12	6	18
		% within occupation of respondent	66.7%	33.3%	100.0%

	others	Count	18	12	30
		% within occupation of respondent	60.0%	40.0%	100.0%
	student	Count	25	0	25
		% within occupation of respondent	100.0%	0.0%	100.0%

v. *Ethnicity*

Individuals from Madhesi Community (122/303) were mostly interviewed. However, only 49 (40.2%) have heard about zoonosis.

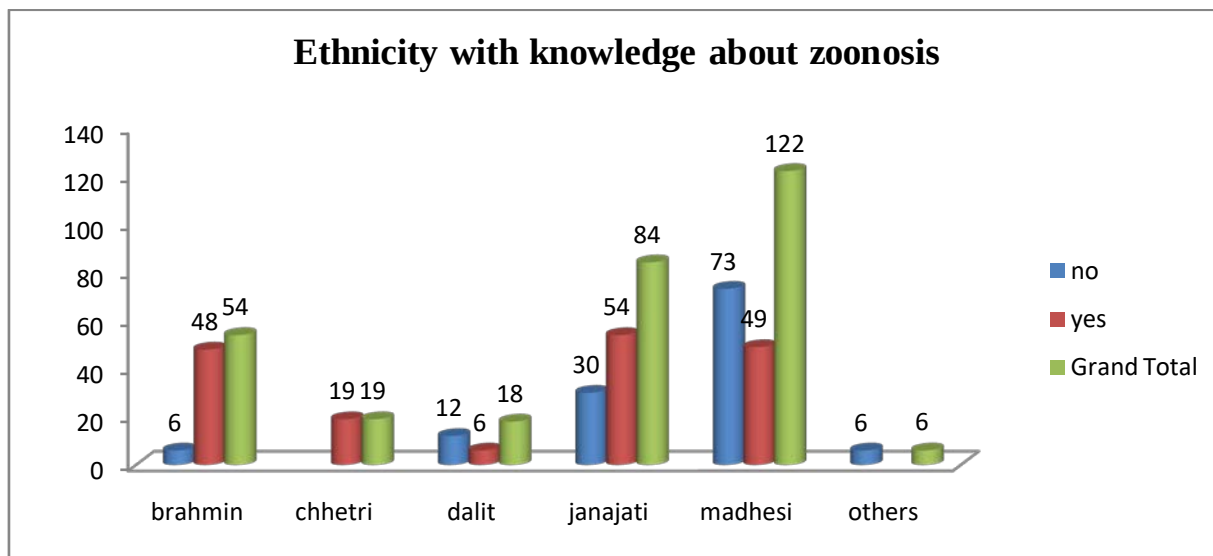


Fig. 6: Ethnicity with knowledge about zoonosis

Table 4: Ethnicity with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Ethnicity of respondent	Brahmin	Count	48	6	54
		% Within ethnicity of respondent	88.9%	11.1%	100.0%
	Chhetri	Count	19	0	19
		% Within ethnicity of respondent	100.0%	0.0%	100.0%
	Janajati	Count	54	30	84
		% Within ethnicity of respondent	64.3%	35.7%	100.0%
	Madhesi	Count	49	73	122
		% Within ethnicity of respondent	40.2%	59.8%	100.0%
	Dalit	Count	6	12	18
		% Within ethnicity of respondent	33.3%	66.7%	100.0%
	Others	Count	0	6	6
		% Within ethnicity of respondent	0.0%	100.0%	100.0%

vi. *Education Level*

Respondents were mostly educated at and upto primary level (84/303). Illiterate people have the least knowledge about zoonosis i.e., only 12 (38.7%) whereas all respondents (100%) from Bachelor's and above have heard about zoonosis.

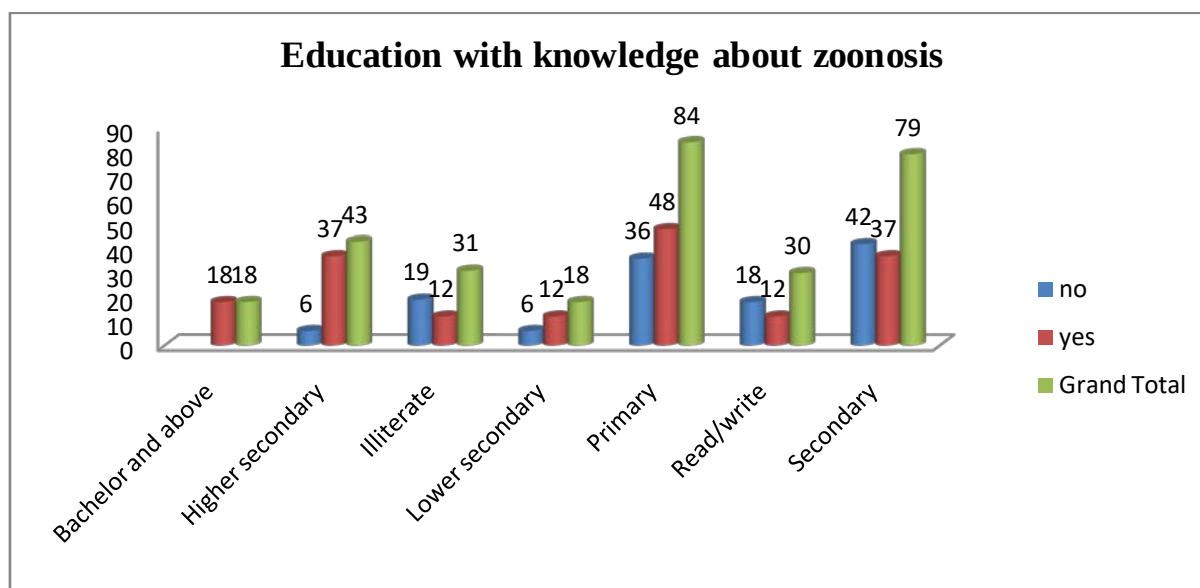


Fig. 7: Education with knowledge about zoonosis

Table 5: Education with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Educational status of the respondents	Illiterate	Count	12	19	31
		% Within educational status of the respondents	38.7%	61.3%	100.0%
	Read/write	Count	12	18	30
		% Within educational status of the respondents	40.0%	60.0%	100.0%
	Primary	Count	48	36	84
		% Within educational status of the respondents	57.1%	42.9%	100.0%
	Lower secondary	Count	12	6	18
		% Within educational status of the respondents	66.7%	33.3%	100.0%
	Secondary	Count	37	42	79
		% Within educational status of the respondents	46.8%	53.2%	100.0%
	Higher secondary	Count	37	6	43
		% Within educational status of the respondents	86.0%	14.0%	100.0%
	Bachelor and above	Count	18	0	18
		% Within educational status of the respondents	100.0%	0.0%	100.0%

vii. Religion

Most of the respondents were Hindu (249/303). Among Hindu, 146 (58.6%) have heard about zoonosis.

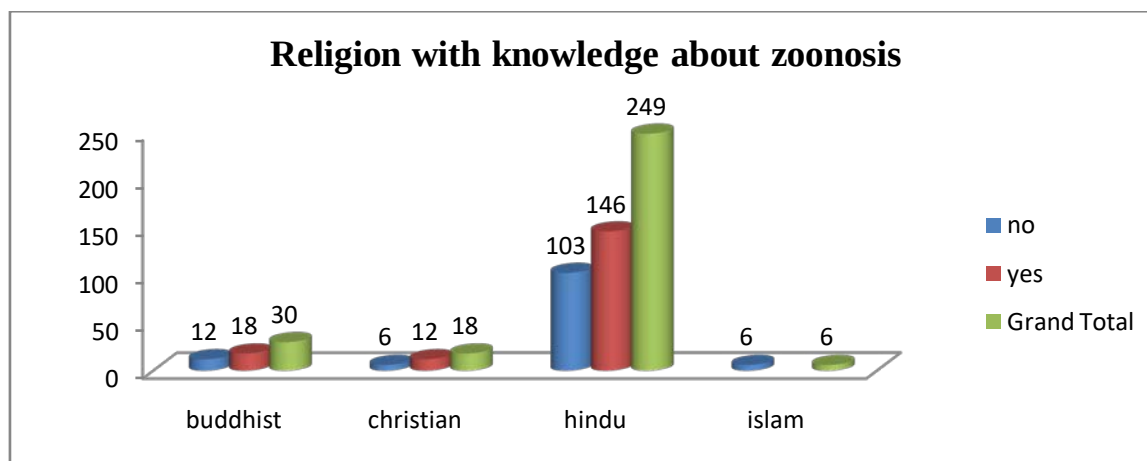


Fig. 8: Religion with knowledge about zoonosis

Table 6: Religion with knowledge about zoonosis

			Do you know about zoonotic disease		Total
			Yes	No	
Religion of the respondant	Hindu	Count	146	103	249
		% Within religion of the respondant	58.6%	41.4%	100.0%
	Buddhist	Count	18	12	30
		% Within religion of the respondant	60.0%	40.0%	100.0%
	Christian	Count	12	6	18
		% Within religion of the respondant	66.7%	33.3%	100.0%
	Islam	Count	0	6	6
		% Within religion of the respondant	0.0%	100.0%	100.0%

viii. *People in household*

Most of the respondents have a family size of 4 (181/303) followed by the family size of 4 to 6 (79/303) and 6 to 10 (43/303).

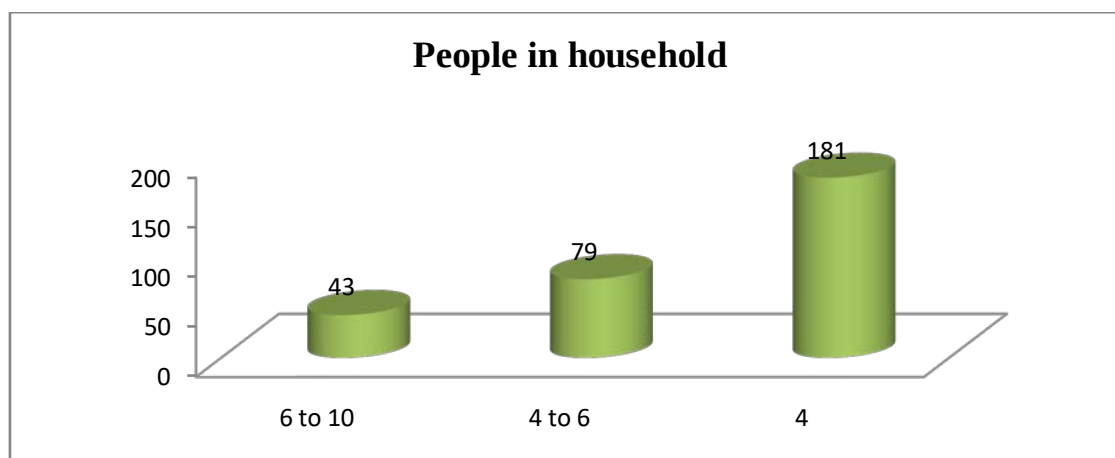


Fig. 9: People in household

ix. *Transmission of zoonotic disease*

a. *Direct Transmission*

Out of total of 176 individuals who have heard about zoonosis, 86% thinks that transmits directly from animal to human.

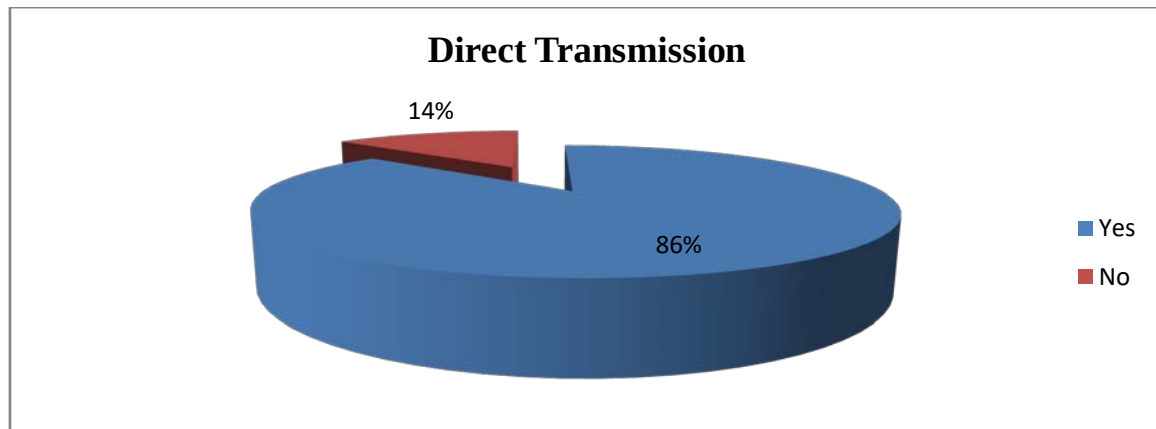


Fig. 10: Knowledge in people regarding the direct transmission of zoonosis

b. *Contaminated food*

Out of 176 individuals, 100% thinks that zoonosis transmit through contaminated food.

c. *Milk Transmission*

Out of 176 individuals, 137 (77.84%) thinks that zoonotic disease could be transmitted through the consumption of milk from the infected animals.

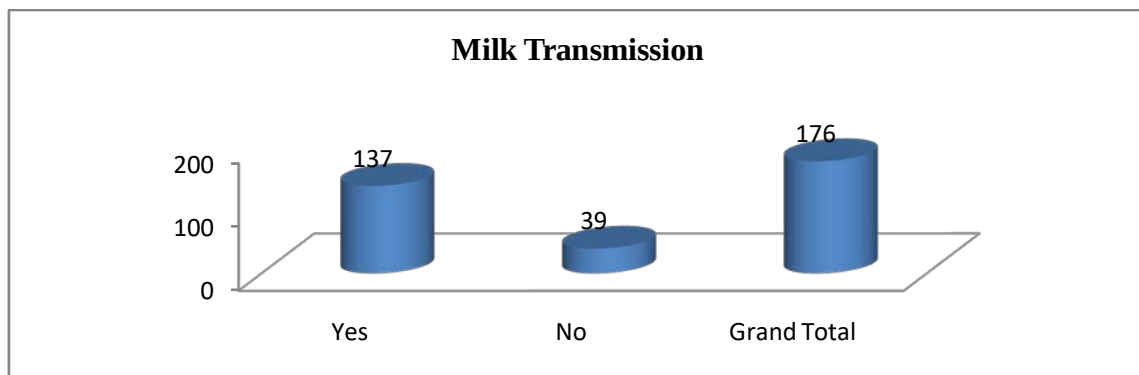


Fig. 11: Knowledge in people regarding the transmission of zoonosis through the milk

d. *Meat Transmission*

Out of 176 individuals, 100% assumes that zoonosis transmits through the contaminated food.

f. *Secretion Transmission*

Out of 176 individuals, 84 thinks zoonosis can transmit through secretion of an infected animal.

e. *Bite Transmission*

Out of 176 individuals, 100% assumes that zoonosis transmits through the bite of an infected rhenimal.

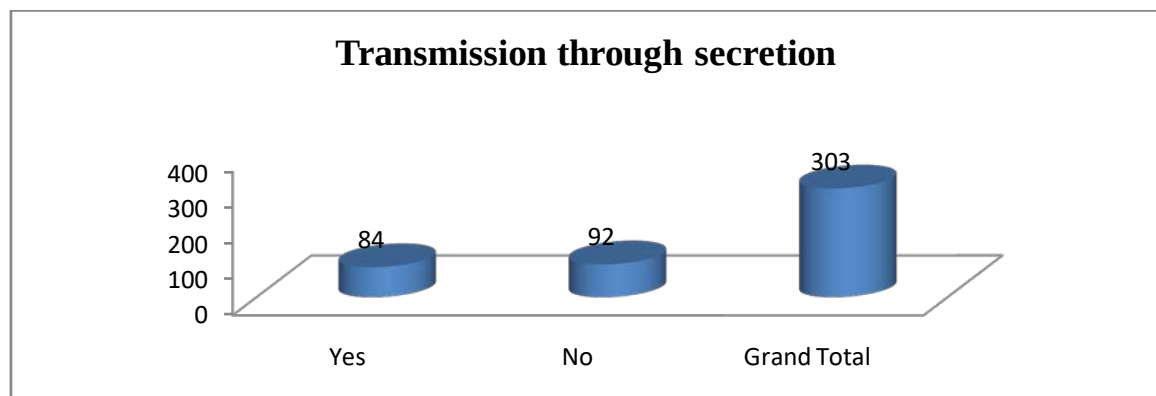


Fig. 12: Knowledge in people regarding the transmission of zoonosis through secretion

x. Zoonotic disease from animal

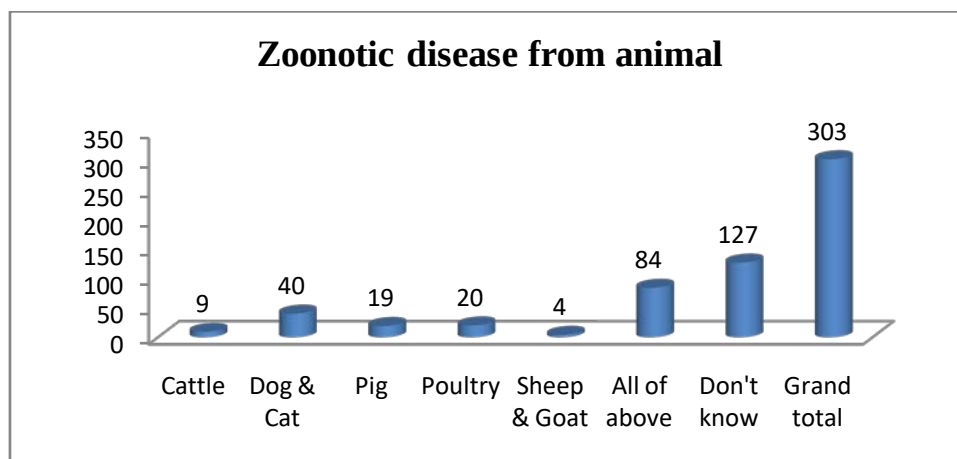


Fig. 13: Zonotic from animal

xi. Family Affected by zoonotic animal

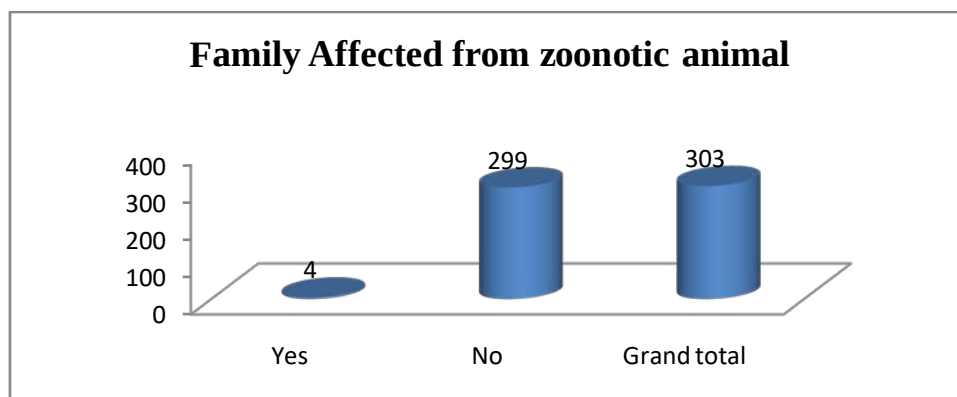


Fig. 14: Family affected by zoonotic animal

xii. Heard of any zoonotic disease

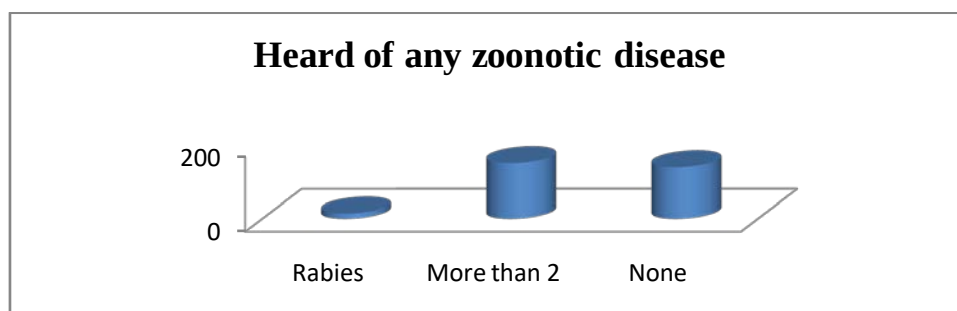


Fig. 15: Heard of any zoonotic disease

b) Statistical Analysis

S. No.		χ^2 value	p-value	Significant or Non-Significant	Cramer's V value	Effect size
1.	Age of Resondent	66.136	0.000	Very Highly Significant	0.467	Medium effect
2.	Gender of respondent	1.236	0.266	Non-significant	-	-
3.	Occupation of Respondent	65.341	0.000	Very Highly Significant	0.464	Medium effect
4.	Ethnicity of Respondent	65.021	0.000	Very Highly Significant	0.463	Medium effect
5.	Educational status of respondent	65.341	0.000	Very Highly Significant	0.464	Medium effect
6.	Religion of respondent	8.935	0.30	Significant	0.172	Weak effect

V. DISCUSSION

In our study, out of total individuals interviewed 58% have heard about zoonotic disease whereas 42% haven't heard about the zoonotic disease. This result is lower than Singh et al., 2019; Wario et al., 2018; Ozioko et al., 2018. The lower level of knowledge regarding zoonoses is likely to cause exposure at increased risks to these diseases.

Television and radio are the source of information to most respondents who know about zoonosis accounting to 37.5%. This might be due to the easy access to radio and television.

Age of respondent significantly influenced the knowledge about zoonosis ($p=0.000$). The people of higher age group ie, above 50 years had less about zoonosis compared to the lower age group. This might be because younger people are more educated than, the older age group.

267 male and 36 female household were interviewed, but only 56.9% male have heard about zoonosis, and 66.7% female have about it but the results were statistically non-significant. Males are at a higher risk of zoonotic disease transmission due to their occupational exposure.

Respondents were mostly educated up to primary level. Illiterate people have the least knowledge about zoonosis ie, only 38.7% whereas all respondents 100% from Bachelor's, and above have heard about zoonosis. The educational status of respondents showed a highly significant difference ($p=0.000$) responding to the knowledge about zoonosis. The lower level of knowledge about zoonosis is due to a low level of education level in people.

People with a different occupation were interviewed, among which people involved in agriculture were mostly interviewed. However, only 36.5% of the agricultural respondents knew about zoonotic diseases. Knowledge about zoonosis was significantly affected by the occupation of respondents ($p=0.000$). Livestock and animal holders are more at risk of zoonosis due to their close contact with animals, but due to lack of awareness among them, they may contract these diseases. All students interviewed knew about zoonotic diseases.

Most of our respondents consist of Madhesi ethnicity, and there is a low level of zoonotic knowledge among them. Also, the dalit community had a lower level of regarding zoonosis. Other ethnic groups like Brahmin, Chhetri, Janjati were comparatively more aware of the diseases. The result was statistically significant ($p=0.000$). Siddharthanagar municipality consists of more Madhesi community. The lower level of awareness among these communities may be due to the lower level of literacy and marginalized living standard. They are at more risk of contracting zoonotic diseases.

In this study, 86%, 100%, 77.84%, 100%, 100% and 47.72% respondents who know about zoonotic diseases think that zoonotic disease can be transmitted directly from animal to man, through contaminated food, milk, meat, bite, and secretion respectively. Most respondents knowing about zoonotic diseases are aware that the transmission takes place in different ways. This awareness is likely to decrease the risk of contracting zoonotic diseases, and they can take proper precautions.

Many respondents knew that zoonotic disease were transmitted from dogs, and cats and less of them knew about transmission through other animals. Majority of the respondents knew that rabies is transmitted by the bite of the dog. People are aware about vaccination against rabies after any dog bite. Out of the respondents interviewed, four people's family have been previously affected with the zoonotic disease.

VI. CONCLUSION

This study suggests that the zoonotic disease pose a threat to people, but the risks were grossly underestimated. Despite the risks possessed by the zoonotic diseases, only a few people are aware and know zoonosis in Siddharthanagar municipality, Rupandehi. Age, gender, occupation, ethnicity, educational status of the respondents showed a significant difference concerning about zoonosis, which may have been because of the higher level of literacy among the specific risk factors. Thus, awareness is to be raised in the people regarding the threats and risks of zoonotic diseases to humans by the collaborative efforts of veterinarians, human health professionals as well as the government by conducting awareness campaigns, dramas or advertisements in the radio or television or by a distribution of pamphlets and printed materials among people.

REFERENCES RÉFÉRENCES REFERENCIAS

1. Chowdhury, T. A., Marufatuzzahan, P. S., & Zahan, F. N. Knowledge, Awareness and Risks of Zoonotic Diseases among the Smallholder Livestock Farmers in Suburban Areas of Sylhet, Bangladesh., *Advances in Biology & Earth Sciences*, Vol. 3, No.1, 2018, pp.69-84.
2. Hundal, J. S., Sodhi, S. S., Gupta, A., Singh, J., & Chahal, U. S. (2016). Awareness, knowledge, and risks of zoonotic diseases among livestock farmers in Punjab. *Veterinary world*, 9(2), 186–191. doi:10.14202/vetworld.2015.186-191.
3. Mangesho, P. E., Neselle, M. O., Karimuribo, E. D., Mlangwa, J. E., Queenan, K., Mboera, L. E. G., ... Rweyemamu, M. (2017). Exploring local knowledge and perceptions on zoonoses among pastoralists in northern and eastern Tanzania. *PLOS Neglected*

- Tropical Diseases, 11(2), e0005345.doi:10.1371/journal.pntd.0005345.
4. Ozioko, K. U., Okoye, C. I., Obiezue, R. N., & Agbu, R. A. (2018). Knowledge, attitudes, and behavioural risk factors regarding zoonotic infections among bushmeat hunters and traders in Nsukka, southeast Nigeria. *Epidemiology and health*, 40, e2018025. doi:10.4178/epih.e2018025
 5. Singh, B. B., Kaur, R., Gill, G. S., Gill, J. P. S., Soni, R. K., & Aulakh, R. S. (2019). Knowledge, attitude and practices relating to zoonotic diseases among livestock farmers in Punjab, India. *Acta Tropica*, 189, 15–21.doi:10.1016/j.actatropica.2018.09.021
 6. Tebug, S. F., Kamga-Waladjo, A. R., Ema, P. J. N., Muyeneza, C., Kane, O., Seck, A., ... Lo, M. (2015). Cattle Farmer Awareness and Behavior Regarding Prevention of Zoonotic Disease Transmission in Senegal. *Journal of Agromedicine*, 20(2), 217–224. doi:10.1080/1059924x.2015.1010068.
 7. Wario, E., Tehetna, A. & Wubishet Zewdie. 2018. Assessment of Community Awareness on Common Zoonotic Disease in and around Yabello District of Oromia regional State, Ethiopia. *Multidisciplinary Advances in Veterinary Science*, 2(4).
 8. Zhang, H. L., Mnzava, K. W., Mitchell, S. T., Melubo, M. L., Kibona, T. J., Cleaveland, S., ... Halliday, J. E. (2016). Mixed Methods Survey of Zoonotic Disease Awareness and Practice among Animal and Human Healthcare Providers in Moshi, Tanzania. *PLoS neglected tropical diseases*, 10(3), e0.





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Efficacy of Intravenous Acetaminophen Compared to Oral Acetaminophen for the Management of Fever in Children

By Dr. Shailendra Kumar & Abhishek Pathak

Introduction- Human body temperature is controlled by the hypothalamus. Neurons in both the preoptic anterior hypothalamus and the posterior hypothalamus receive two kinds of signals: one from peripheral nerves that transmit information from warmth/cold receptors in the skin and the other from the temperature of the blood bathing the region. These two types of signals are integrated by the thermoregulatory center of the hypothalamus to maintain normal temperature. In a neutral temperature environment, the metabolic rate of humans produces more heat than is necessary to maintain the core body temperature in the range of 36.5–37.5°C (97.7–99.5°F). A normal body temperature is maintained ordinarily, despite environmental variations, because the hypothalamic thermoregulatory center balances the excess heat production derived from metabolic activity in muscle and the liver with heat dissipation from the skin and lungs.^[1]

GJMR-F Classification: NLMC Code: WB 152



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Efficacy of Intravenous Acetaminophen Compared to Oral Acetaminophen for the Management of Fever in Children

Dr. Shailendra Kumar ^α & Abhishek Pathak ^ο

I. INTRODUCTION

Human body temperature is controlled by the hypothalamus. Neurons in both the preoptic anterior hypothalamus and the posterior hypothalamus receive two kinds of signals: one from peripheral nerves that transmit information from warmth/cold receptors in the skin and the other from the temperature of the blood bathing the region. These two types of signals are integrated by the thermoregulatory center of the hypothalamus to maintain normal temperature. In a neutral temperature environment, the metabolic rate of humans produces more heat than is necessary to maintain the core body temperature in the range of 36.5–37.5°C (97.7–99.5°F). A normal body temperature is maintained ordinarily, despite environmental variations, because the hypothalamic thermoregulatory center balances the excess heat production derived from metabolic activity in muscle and the liver with heat dissipation from the skin and lungs.^[1]

Fever (also known as pyrexia or a febrile response) is caused by increase in body temperature above the normal range due to an increase in the temperature regulatory set-point in hypothalamus. The increase in set-point triggers increased muscle tone and causes a feeling of cold resulting in greater heat production and efforts to conserve heat. This results in an increase in body temperature. When the set-point temperature returns to normal a person feels hot and may begin to sweat.

Fever is one of the commonest presenting symptoms in clinical medicine in all age group patients. It is defined as oral temperature of >37.2°C (>98.9°F) in the morning or >37.7°C (>99.9°F) in the evening.^[1]

Fever can be caused by a numerous ailments ranging from potentially serious conditions to very benign illness. This includes both infectious as well as non infectious cause. Infectious illness includes different viral, bacterial and parasitic infections (eg- common cold, urinary tract infections, meningitis, malaria, appendicitis etc). Non-infectious causes include vasculitis, deep vein thrombosis, allergic manifestation, malignancies etc.

Fever may be useful as a defense mechanism as the body's immune response can be strengthened at higher temperatures; however, this issue is controversial.

Fever accounts for a substantial proportion of emergency consultations. It is one of the leading patient complaints aside from abdominal pain and chest pain in all emergency department visits. Treatment with antipyretics not only reduces fever but also improves the associated other symptoms (eg- arthralgia, myalgia, headache, nausea, vomiting).^[2, 3] It also causes undue worry among the anxious parents of sick kids. Hence treatments of fever with proper antipyretic medications are extremely important. Antipyretic medications such as ibuprofen or paracetamol are effective at lowering the temperature, which may improve comfort.

Both pharmacologic and nonpharmacologic methods like tepid sponging^[4] have been used to reduce body temperature in febrile patients. Extensive studies have been done in children comparing the efficacy of various antipyretics including paracetamol, ibuprofen, nimesulide, ketoprofen, propacetamol, and dipyrone.

Acetaminophen is a synthetic, nonopioid, centrally acting analgesic and antipyretic agent.^[5] It has a well-established efficacy profile, a well-understood risk/benefit ratio, and a very low potential for harmful drug-drug interactions.^[6] In recommended doses, acetaminophen is considered safe for infants, children, and adults. Although the exact site and mechanism of action of acetaminophen are not clearly defined, its effectiveness as an antipyretic agent has been attributed to its effect on the hypothalamic heat-regulating center^[7, 8, 9].

Worldwide, acetaminophen is currently the most widely used analgesic and antipyretic. Per Oral (PO) acetaminophen was initially approved by the U.S. Food and Drug Administration (FDA) in 1951 and was first marketed in the United States in 1953. Acetaminophen has been well known as an effective analgesic and antipyretic. Intravenous (IV) acetaminophen is approved for the short-term treatment of acute pain and fever in approximately 80 countries outside of the United States and was first approved in Europe in 2001.

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Studies on the efficacy of antipyretic drugs are very scarce. Most of the available studies on acetaminophen were carried out in endotoxin-induced febrile models^[10, 11, 12] and in intensive care patients.^[13] Few studies have been done on oral diclofenac using varying doses^[14] or comparing it with ibuprofen^[15] or acetylsalicylic acid. Intravenous ketorolac has also been studied as an antipyretic in adults.^[16]

To the best of our knowledge, there is very few literature available for comparing the antipyretic efficacy of paracetamol (both oral and intravenous) in children. Therefore, we decided to compare the antipyretic efficacy of oral and intravenous paracetamol in febrile children.

II. AIM AND OBJECTIVES

a) Aim

To determine efficacy of Intravenous Acetaminophen Compared to Oral Acetaminophen for the management of Fever in children.

b) Formulation of hypothesis

The use of Intravenous Acetaminophen Compared to Oral Acetaminophen for the Management of Fever in children has:

a. Better efficacy and tolerability of the Intravenous preparation.

A) Primary outcome

The primary efficacy outcome will be the weighted sum of temperature differences from baseline at time T_0 through T_{360} minutes.

B) Secondary outcomes

To assess tolerability of oral preparation as compared to intravenous preparation e.g. new onset constipation, allergic reaction and dry mouth.

III. MATERIALS AND METHODS

a) Type of study

Prospective Observational study.

b) Study period

One and Half Years– from October 2013 to April 2015.

c) Study Place

Department of Pediatrics Army Hospital (Research & Referral), Delhi Cantt.

d) Sample size

Based on the statistical calculation a total number of 200 cases were included in the study population in Army Hospital (Research & Referral), Delhi Cantt, India, a tertiary care hospital over one and half years from October 2013 to April 2015.

e) Inclusion Criteria

All admitted or out-patient department cases with fever more than 103°F.

f) Exclusion Criteria

- 1) Treated with any other medication having antipyretic effects within 2 days of admission.
- 2) Known hypersensitivity to acetaminophen or other NSAIDs.
- 3) Impaired liver function, active hepatic disease, or evidence of clinically significant liver and renal disease.

g) Methodology

1. All pediatric cases between 1-12 years age, admitted to the Pediatric ward of Army Hospital (R&R), and those presenting to the Pediatric OPD with fever more than 103°F requiring IV/Oral acetaminophen were considered eligible for the study.
2. Written Informed consent was taken from parents before enrollment in the study and administration of the medicine.
3. Following receipt of consent, children were randomly allocated (using computer generated randomization) in two groups – one group receiving oral PCM and the other one receiving IV PCM divided into two groups alternate one group receiving oral acetaminophen (@15mg/kg/dose) or and the other group receiving IV acetaminophen (@15mg/kg/dose) as antipyretic. Children were enrolled in each group consecutively.
4. Baseline vital parameters including mean arterial pressure using non-invasive blood pressure monitor by oscillometric technique were recorded.
5. Following administration of the drug the child was monitored for the primary efficacy outcome.
6. Axillary temp. was recorded with mercury thermometer for 5 min every ½ hrly, till 6 hrs.
7. Child was monitored for any evidence of intolerance.
8. All data including the primary and secondary outcomes was recorded as per the Performa.

h) Ethical Consideration

We have obtained the necessary approval to conduct the study from the Institutional Ethics Committee of Army Hospital (Research and Referral) Delhi Cantt., India. The participants were given a full explanation about the purpose of the study and assurance about the confidentiality of the information and that the participation was optional. Consent of the parents of children was taken prior to enrolment to the study.

i) Statistical Analysis

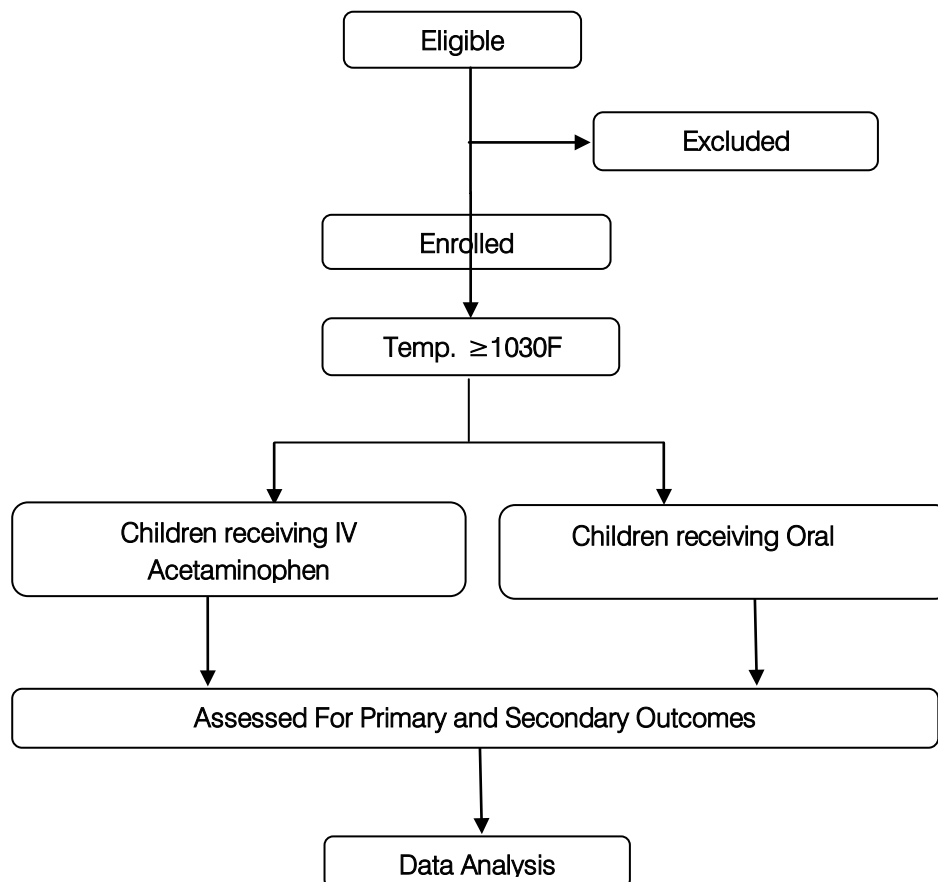
All the statistical analysis was performed using SPSS version 20. The clinical profile of patients was analyzed by chi-square test for qualitative variables and Student t test for quantitative variables. 5% probability level was considered as statistically significant i.e., $p < 0.05$.

j) *Statement of Limitation*

Time to a temperature reduction analysis; time to the specific event (e.g., time to specific temperature or rescue) estimated based on the Kaplan-Meier method (censored at 360 minutes if a subject did not achieve the specified temperature reduction); global evaluation at T₃₆₀ minutes summarized for each group by frequency and percentage for each categorical

response and analyzed using unstratified Cochran-Mantel-Haenzel mean score test using integer scores; and continuous variables such as change in temperature, maximum temperature reduction, and percentage of subjects with a temperature of <38.5°C, analysis should have carried out for other efficacy endpoints.

Flow Diagram of Patient Enrolment and Assessment



IV. RESULTS

The present study, carried out over a period of one and half years—from October 2013 to April 2015, was aimed at “Efficacy of Intravenous Acetaminophen

Compared to Oral Acetaminophen for the Management of Fever in children” at Department of Pediatrics, Army Hospital (Research and Referral) Delhi Cantt., India.

Table 1: Study group Distribution

Groups	Frequency	Percent
Intravenous Acetaminophen	100	50.0
Oral Acetaminophen	100	50.0

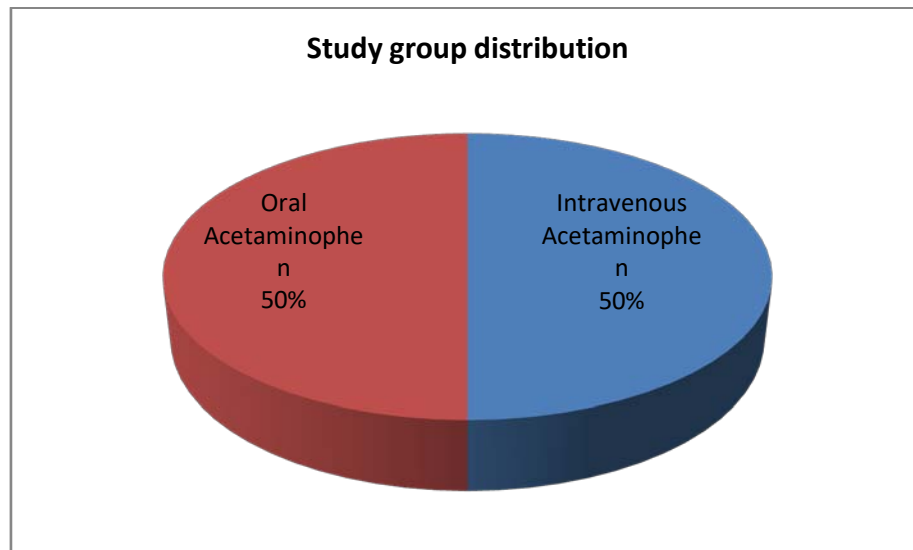


Figure 1: Study group Distribution

Table 2: Gender Distribution

Sex	Frequency	Percent
Male	141	70.5
Female	59	29.5

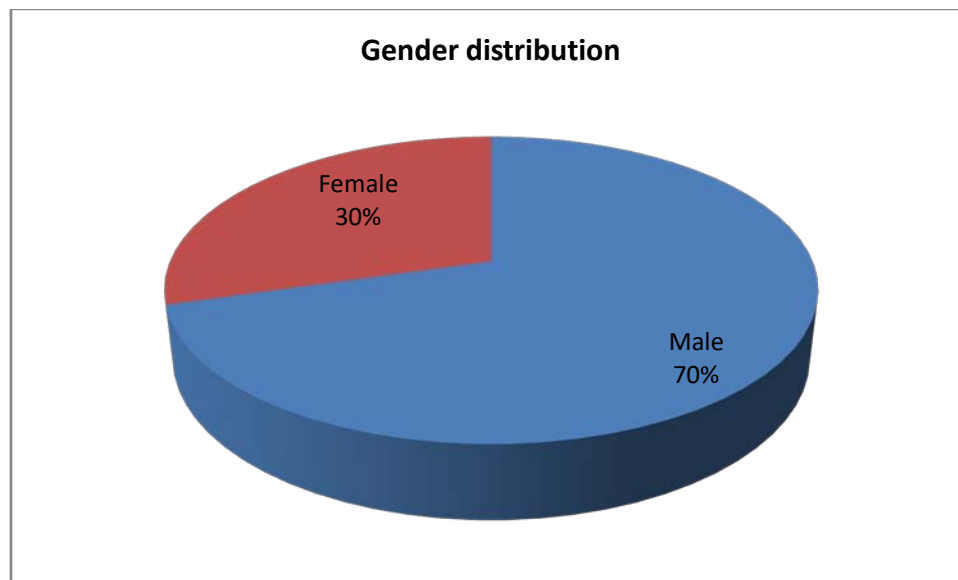


Figure 2: Gender Distribution

Table 3: Gender wise distribution of study group

Crosstab						
			Sex		Total	P-value
			Male	Female		
Groups	Intravenous Acetaminophen	Number	70	30	100	0.877
		% of Total	35.0%	15.0%	50.0%	
	Oral Acetaminophen	Number	71	29	100	
		% of Total	35.5%	14.5%	50.0%	
Total		Number	141	59	200	
		% of Total	70.5%	29.5%	100.0%	

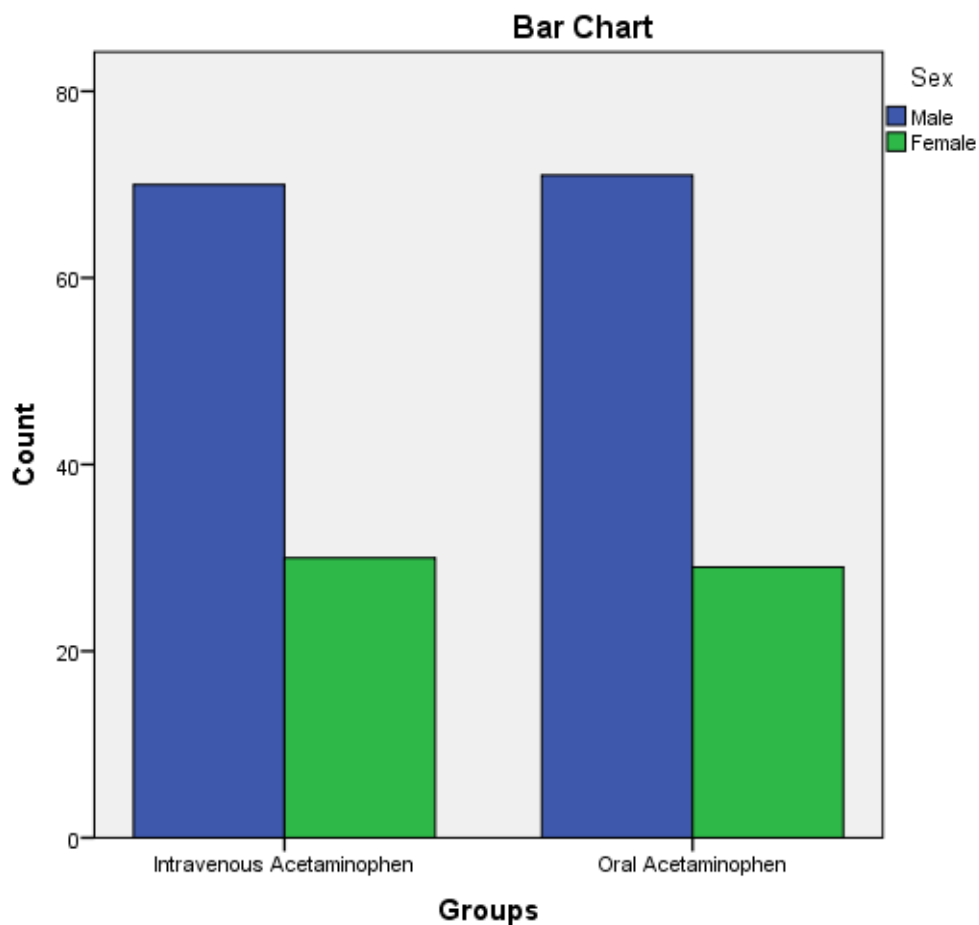


Figure 3: Gender wise distribution of study group

Table 4: Temperature decreased wise distribution of study group

Crosstab						P-value
			Temp decreased		Total	
			No	Yes		
Groups	Intravenous Acetaminophen	Number	12	88	100	0.489
		% of Total	6.0%	44.0%	50.0%	
	Oral Acetaminophen	Number	9	91	100	
		% of Total	4.5%	45.5%	50.0%	
Total		Number	21	179	200	
		% of Total	10.5%	89.5%	100.0%	

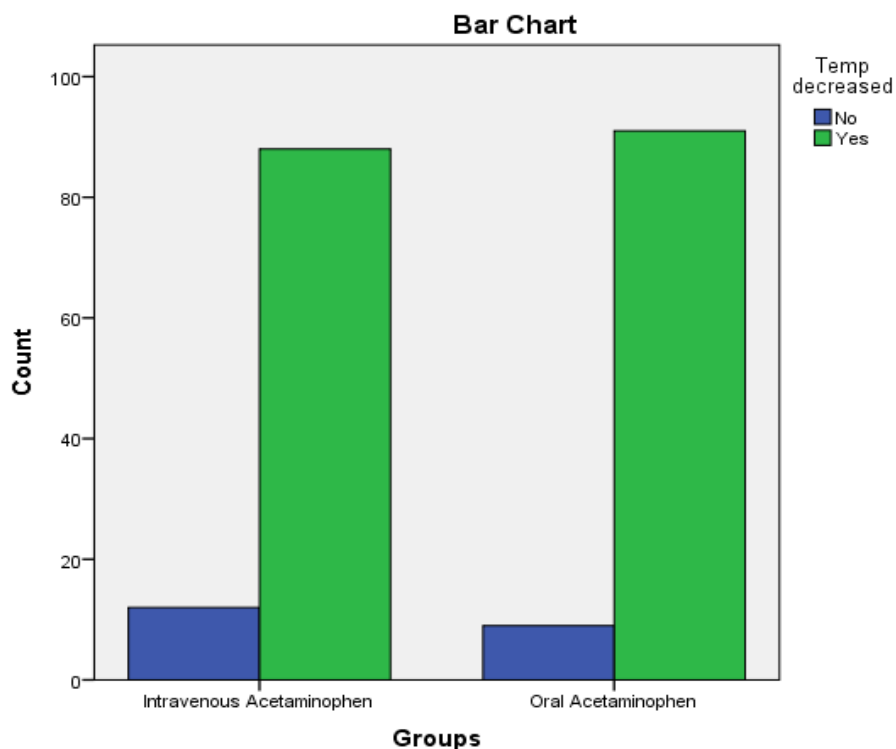


Figure 4: Temperature decreased wise distribution of study group

Table 5: Base line Statistics of all cases

Base line Statistics of all Cases					
		Age (in Yrs.)	Weight (in Kgs)	HR (per Min)	RR (per Min)
Mean		6.7742	23.2975	118.4400	23.9200
Std. Error of Mean		.19361	.45287	.65604	.19637
Median		6.2500	22.0000	122.0000	24.0000
Mode		5.00	20.00	124.00	24.00
Std. Deviation		2.73807	6.40452	9.27776	2.77708
Percentiles	25	5.0000	18.0000	112.0000	22.0000
	50	6.2500	22.0000	122.0000	24.0000
	75	9.0000	28.0000	126.0000	26.0000

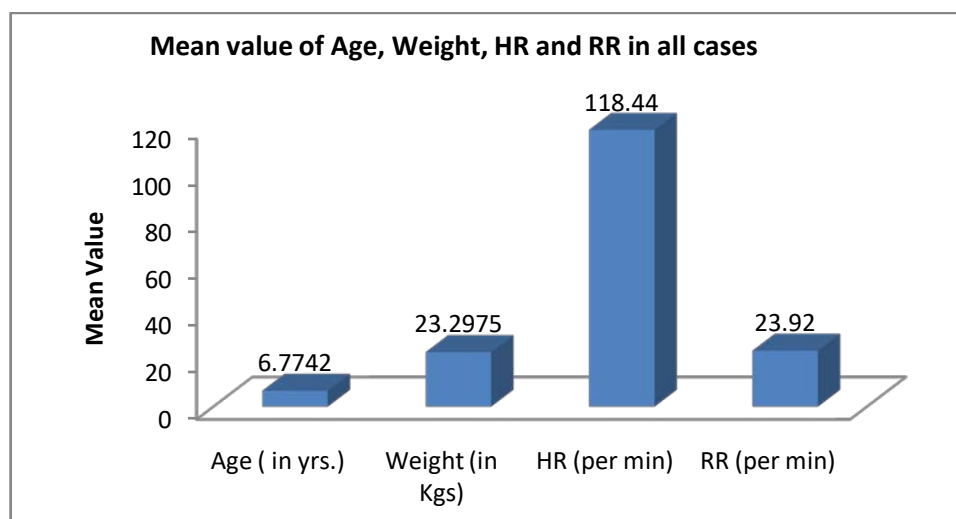


Figure 5: Base line Statistics of all cases

Table 6: Study group wise comparison of different parameters

Group Statistics						P-value
	Groups	N	Mean	Std. Deviation	Std. Error Mean	
Age (in yrs.)	Intravenous Acetaminophen	100	6.8085	2.65990	.26599	.860
	Oral Acetaminophen	100	6.74	2.82707	.28271	
Weight (in Kgs)	Intravenous Acetaminophen	100	23.295	5.98951	.59895	.996
	Oral Acetaminophen	100	23.30	6.82464	.68246	
HR (per min)	Intravenous Acetaminophen	100	118.44	9.3012	.93012	.850
	Oral Acetaminophen	100	118.32	9.01949	.90195	
RR (per min)	Intravenous Acetaminophen	100	23.92	2.41410	.24141	.419
	Oral Acetaminophen	100	23.52	2.47460	.24746	

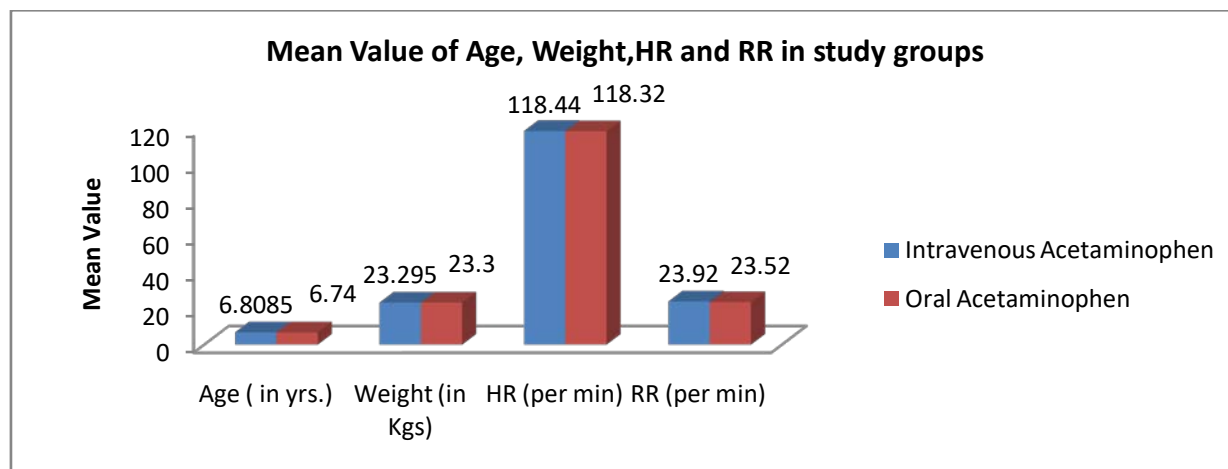


Figure 6: Study group wise comparison of different parameters

Table 7: Time post dose mean temperature variation in the study groups

	Groups	N	Mean	Std. Deviation	P-value
T0	Intravenous Acetaminophen	100	103.76	0.698	0.011
	Oral Acetaminophen	100	103.99	0.569	
T30	Intravenous Acetaminophen	100	102.44	0.536	<0.001
	Oral Acetaminophen	100	103.24	0.789	
T60	Intravenous Acetaminophen	100	101.16	0.735	<0.001
	Oral Acetaminophen	100	102.57	0.915	
T90	Intravenous Acetaminophen	100	100.18	0.798	<0.001
	Oral Acetaminophen	100	101.8	0.669	
T120	Intravenous Acetaminophen	100	99.25	0.636	<0.001
	Oral Acetaminophen	100	101.11	0.889	
T150	Intravenous Acetaminophen	100	98.60	0.835	<0.001
	Oral Acetaminophen	100	101.41	1.015	
T180	Intravenous Acetaminophen	100	98.60	0.575	<0.001
	Oral Acetaminophen	100	99.80	0.446	
T210	Intravenous Acetaminophen	100	98.60	0.413	0.154
	Oral Acetaminophen	100	99.15	0.666	
T240	Intravenous Acetaminophen	100	98.60	0.612	0.875
	Oral Acetaminophen	100	98.60	0.792	
T270	Intravenous Acetaminophen	100	98.60	0.505	0.651
	Oral Acetaminophen	100	98.60	0.472	
T300	Intravenous Acetaminophen	100	98.60	0.433	0.843
	Oral Acetaminophen	100	98.60	0.651	
T330	Intravenous Acetaminophen	100	98.60	0.689	0.845
	Oral Acetaminophen	100	98.60	0.723	
T360	Intravenous Acetaminophen	100	98.60	0.305	0.925
	Oral Acetaminophen	100	98.60	0.205	

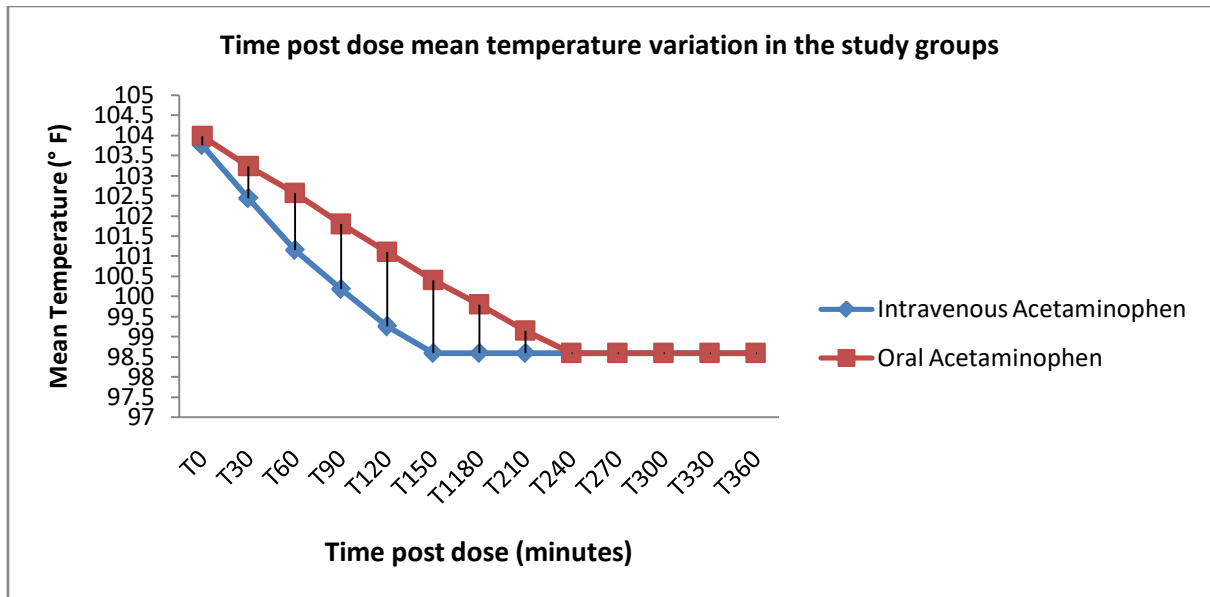


Figure 7: Time post dose mean temperature variation in the study groups

Table 8: Allergic reaction wise distribution of study group

Crosstab						P-value
			Allergic reaction		Total	
			No	Yes		
Groups	Intravenous Acetaminophen	Number	93	7	100	0.007
		% of Total	46.5%	3.5%	50.0%	
	Oral Acetaminophen	Number	100	0	100	
		% of Total	50.0%	0.0%	50.0%	
Total		Number	193	7	200	
		% of Total	96.5%	3.5%	100.0%	

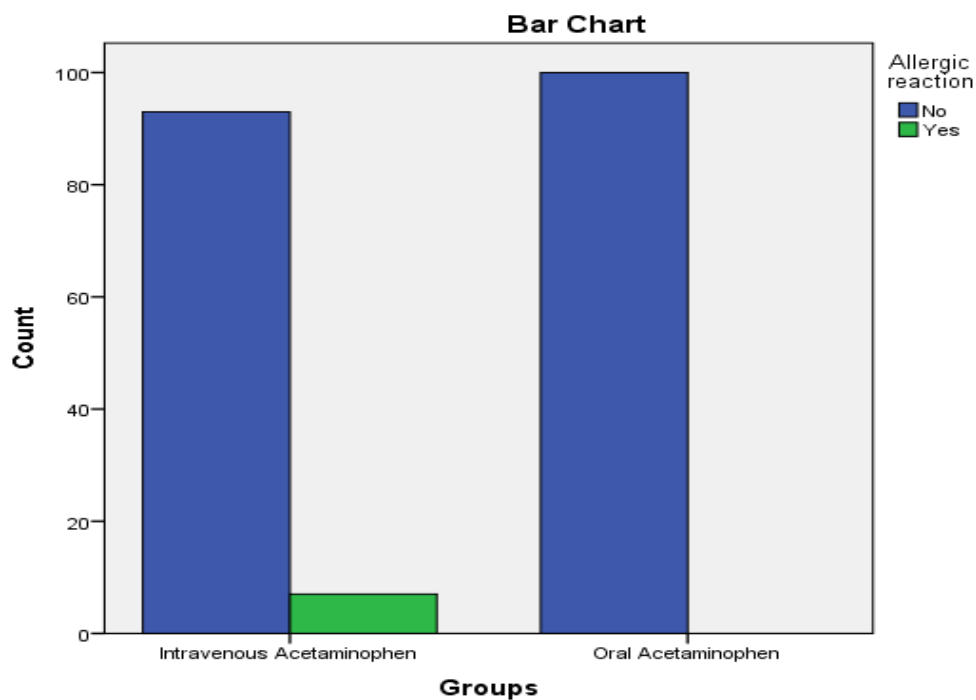


Figure 8: Allergic reaction wise distribution of study group

Table 9: Additional dose wise distribution of study group

Crosstab						P-value
			Additional dose		Total	
			No	Yes		
Groups	Intravenous Acetaminophen	Number	90	6	100	0.297
		% of Total	45.0%	3.0%	50.0%	
	Oral Acetaminophen	Number	94	10	100	
		% of Total	47.0%	5.0%	50.0%	
Total		Number	184	16	200	
		% of Total	92.0%	8.0%	100.0%	

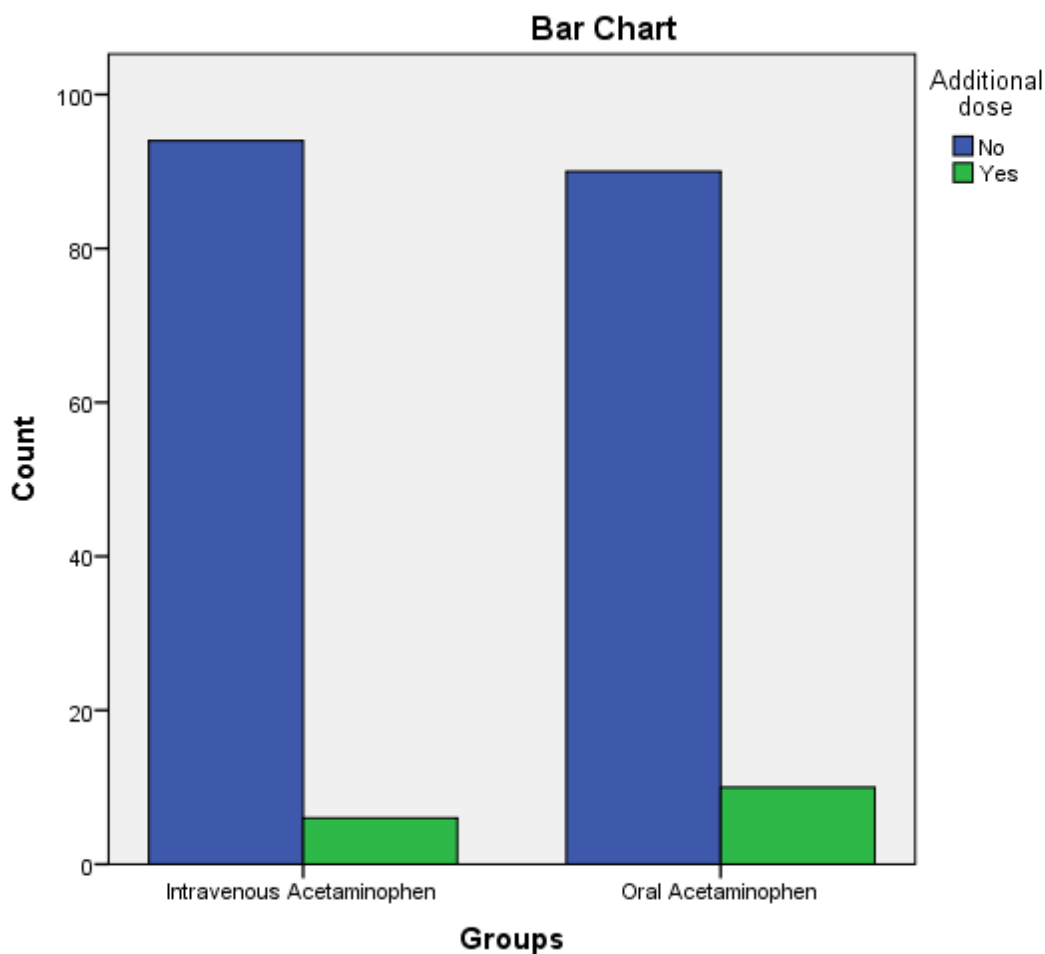


Figure 9: Additional dose wise distribution of study group

Table 10: New onset constipation wise distribution of study

Crosstab						
			New onset constipation		Total	P-value
			No	Yes		
Groups	Intravenous Acetaminophen	Number	92	8	100	0.004
		% of Total	46.0%	4.0%	50.0%	
	Oral Acetaminophen	Number	100	0	100	
		% of Total	50.0%	0.0%	50.0%	
Total		Number	192	8	200	
		% of Total	96.0%	4.0%	100.0%	

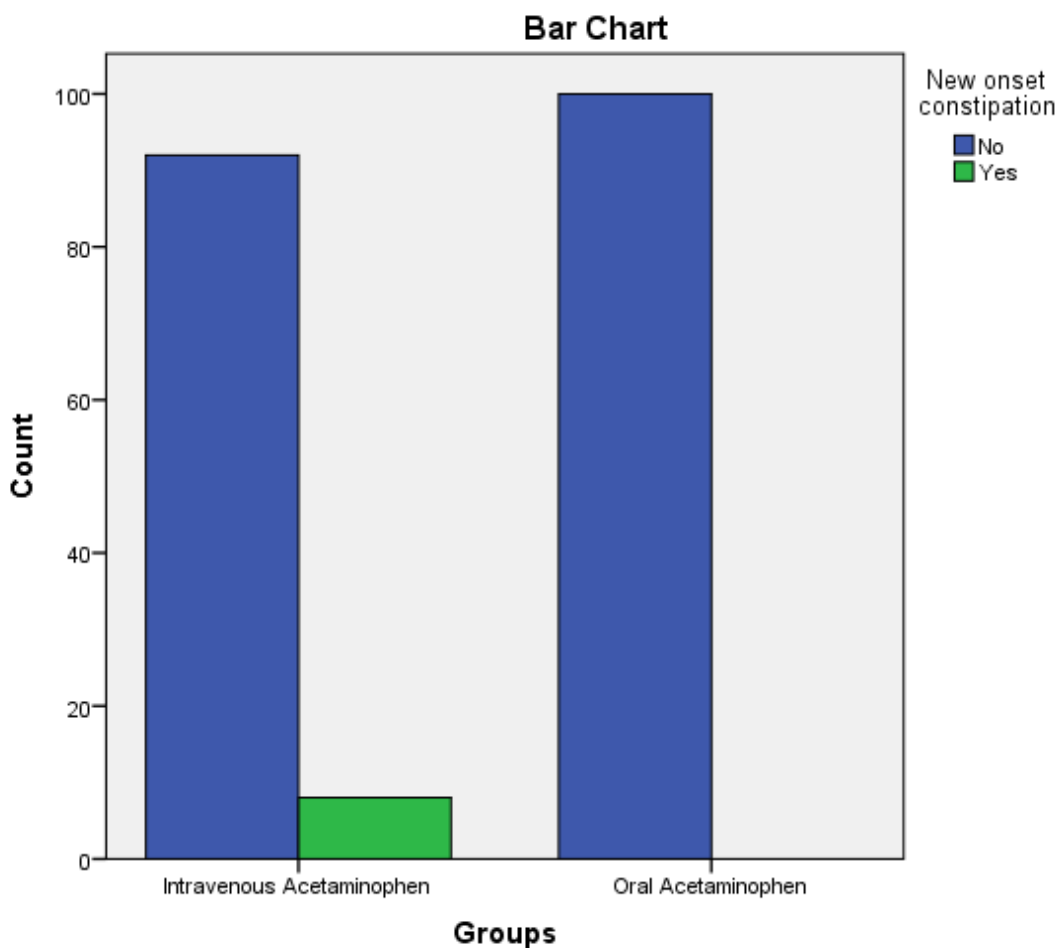


Figure 10: New onset constipation wise distribution of study group

Table 11: Dry mouth wise distribution of study group

Crosstab						
			Dry mouth		Total	P-value
			No	Yes		
Groups	Intravenous Acetaminophen	Number	92	8	100	0.004
		% of Total	46.0%	4.0%	50.0%	
	Oral Acetaminophen	Number	100	0	100	
		% of Total	50.0%	0.0%	50.0%	
Total		Number	192	8	200	
		% of Total	96.0%	4.0%	100.0%	

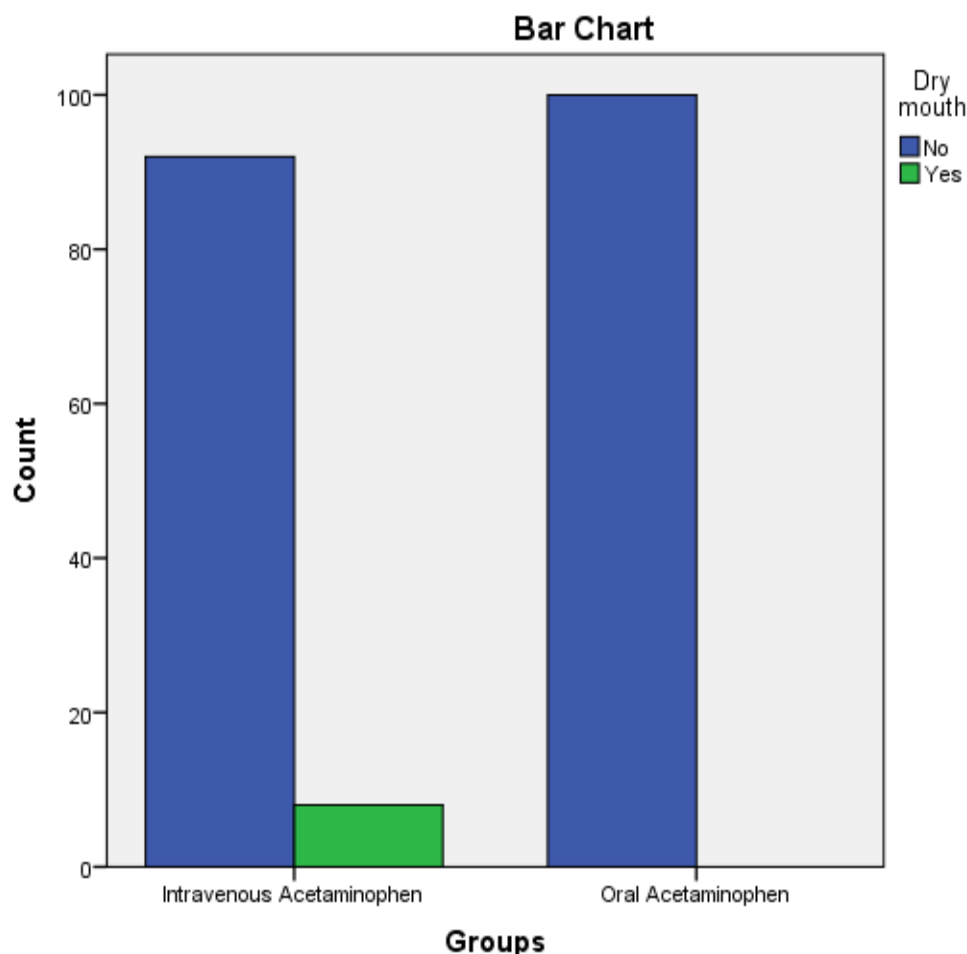


Figure 11: Dry mouth wise distribution of study group

V. SUMMARY AND CONCLUSION

Acetaminophen has been a cornerstone of the management of mild to moderate pain and the treatment of fever for more than 50 years. An intravenous (IV) preparation would allow for rapid, reliable drug delivery to patients in the immediate post-operative setting or in cases where enteral administration is not possible due to underlying disease. The purpose of this study was to assess the dynamics of the onset of antipyretic efficacy of intravenous (IV) acetaminophen versus oral (PO) acetaminophen in the management of fever in children.

This observational single-dose study was conducted at Department of Pediatrics, Army Hospital (Research and Referral), a multispecialty tertiary care center in New Delhi in fever patients to assess the antipyretic efficacy of IV acetaminophen 15mg/kg/dose versus PO acetaminophen 15mg/kg/dose over 6 hours. Subjects were randomly assigned to receive either IV acetaminophen (n = 100) or PO acetaminophen (n = 100). The salient observations of this study are as follows:

- A total of 200 participants were enrolled, allocated groups and received study medication: 100 in the IV group and 100 in the PO acetaminophen group.
- Demographics and baseline characteristics were similar between the two groups and were normally distributed.
- The mean ($\pm$ SD) age was 6.7 ($\pm$ 2.75) years, the mean weight was 23.3 ($\pm$ 6.41) kg.
- The majority of subjects were male (71%). The sex distribution was similar in both the groups 70% males and 30% females.
- Allergic reaction was found in 7 (3.5%) patients in IV acetaminophen group and was absent in PO acetaminophen group [table 8, figure 8]. This association is found to be statistically significant (P value 0.007).
- Onset of constipation and dry mouth was found in 8 patients (4%) in IV acetaminophen group and was absent in PO acetaminophen group [table 10 & 11, figure 10 & 11]. This association is found to be statistically significant (P value 0.004).
- Additional dose was required in 06 patients (3%) in Intravenous acetaminophen group and 10 patients

(5%) in Oral Acetaminophen group respectively. However this association is not statistically significant (P value 0.297).

- Temperature was decreased in all patients in both the Intravenous and Oral acetaminophen groups except some had required some extra additional dose.
- Statistically significant differences in the WSTD through 180 minutes ($p < 0.004$) were observed in favor of the IV acetaminophen group when compared to those receiving PO acetaminophen. After 4 hours, there was no difference in the WSTD between the treatment groups.
- Significant changes in temperature were observed in favor of IV acetaminophen over PO at each time point from T0 through T180.

From the results of the present study, it may be concluded that a single dose of intravenous acetaminophen is safe and effective in reducing fever. Intravenous acetaminophen may be useful where patients are unable to tolerate oral administration or when rapid reduction of temperature is desirable.

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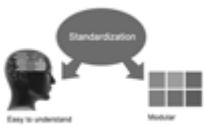
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12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.



20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.



Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.



The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.



Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- o Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- o In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- o Present a background, such as by describing the question that was addressed by creation of an exacting study.
- o Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- o Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- o Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- o Do not include raw data or intermediate calculations in a research manuscript.
- o Do not present similar data more than once.
- o A manuscript should complement any figures or tables, not duplicate information.
- o Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."



Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- o You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- o Give details of all of your remarks as much as possible, focusing on mechanisms.
- o Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- o One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- o Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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CRITERION FOR GRADING A RESEARCH PAPER (COMPILATION)
BY GLOBAL JOURNALS

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Topics	Grades		
	A-B	C-D	E-F
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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