

Original Research Article

Prevalence and risk factors of acid peptic ulcer disease at a tertiary care hospital

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ABSTRACT

Background: In day to day practice, at outpatient department of General Medicine, at Mahavir Institute of Medical Sciences, Vikarabad, Telangana, India authors are coming across a significant number of patients with acid peptic disease (APD). This prompted us to carry out the present study. The objective is to study the prevalence, risk factors of acid peptic disease and to give suitable recommendations

Methods: Present study was hospital based cross sectional study carried out at outpatient department of General Medicine for a period of ten months from June 2017 to March 2018 among 307 outpatients.

Results: The prevalence of acid peptic disease was found to be very high in the present study i.e. 38.1%. This was very high compared to the available literature. The prevalence of acid peptic disease was significantly associated with increasing age, lower social class, alcohol use, tea use and NSAID use. Acid peptic disease was not found to be associated with sex, residence, literacy, smoking, coffee intake, and obesity.

Conclusions: Prevalence of acid peptic disease was found to be very high in the present study. Hence there is a need to institute the preventive and control measures to bring down the prevalence. At the same time the people in the surroundings should be made aware of this health problems and its risk factors.

Keywords: Acid peptic disease, Prevalence, Risk factors

INTRODUCTION

Based on the study findings, authors can suggest the preventive measures for general population in the catchment area of this hospital attached to the medical college. Authors can put more posters at the hospital premises to make people aware about this disease. Acid peptic disease is very common health problem all over the world.¹ Prevalence of acid peptic disease was 10.3% from United States of America among 18 years and above in 1989.² But from Hong Kong it was 14% among 20 years and above.³ Pathophysiology of acid peptic disease is not very clear. Excessive acid secretion, spasm of muscles or inflammation was thought to be some of the factors as stated by some studies. Other factors

commonly found responsible for acid peptic disease are habitual factors in day to day life. These can be habit of consumption of excessive spicy foods, habit of excessive consumption of tea, habit of excessive consumption of alcohol, habit of excessive tobacco use, habit of excessive consumption of coffee, unjustified use and habit of taking pain killers like NSAIDs. All these risk factors are thought to be associated with increased incidence of acid peptic disease. Apart from this, most common but commonly neglected issue is of emotional stress. Uncontrolled emotional stress has been considered as to trigger acid secretion or create imbalance in the acid secretion leading to the occurrence of acid peptic disease.^{4,5} Not all patients suffering from acid peptic disease will be having the symptoms. A study revealed

that 67% of the patients were asymptomatic.⁶ But such patients are at risk of developing the severe dangerous complications like perforation or bleeding.⁷

Hence present study was planned to study prevalence and risk factors of acid peptic disease among out patients of General Medicine department and to give suitable recommendations based on the findings of the present study.

METHODS

Present study was hospital based cross sectional study carried out at outpatient department of General Medicine for a period of ten months from June 2017 to March 2018. Based on the findings of the previous study it was found that the prevalence of acid peptic disease was 10%.^{8,9} Using this prevalence with 95% confidence interval with 5% precision and alpha error of 5% the sample size came out to be 139. But authors thought of taking a sample size of 300.

Inclusion criteria

- Patients attending the outpatient department of General Medicine.
- Patients willing to participate in the present study.
- Patients aged 18 years and above.

Exclusion criteria

- Patients found to be suffering from severe systemic illness.
- Debilitated patients who cannot participate.

All eligible patients willing to participate in the present study were included in the present study. The data from patients was taken in the pre-designed, pre-tested, semi structured study questionnaire for the present study.

Acid peptic disease will be diagnosed as per the standard criteria and based on the physician acumen. An attempt will be made to identify the risk factors like smoking etc.

The diagnosed patients were given appropriate treatment. If required, the patient was advised investigations. The patient was given health education to prevent further progression of the disease. They were followed if appropriate. (But it was not a part of the present study as mentioned earlier).

Statistical analysis

The data was entered in the Microsoft Excel work sheet. Descriptive data was expressed in proportions. Statistical tests like chi square test and odds ratio were applied to study association between risk factors and the disease. For this, authors used Open Epi software available free online.

RESULTS

Table 1: Age and sex wise distribution of study subjects.

Age (years)	Male		Female		Total	
	No.	%	No.	%	No.	%
18-25	14	8.9	16	10.7	30	9.8
26-35	30	19	42	28.2	72	23.5
36-45	30	19	37	24.8	67	21.8
46-55	30	19	22	14.8	52	16.9
≥ 56	54	34.1	32	21.5	86	28.0
Total	158	51.5	149	48.5	307	100

Males were more than females, but the difference was not significant. Among males, majority i.e. 34.1% belonged to age group of more than or equal to 56 years but in females, majority i.e. 28.2% belonged to 26-35 years of age group. Overall only 9.8% of the study subjects belonged to the age group of 18-25 years.

Table 2: Distribution of study subjects as per their socio-demographic variables.

Socio-demographic variables	Number	%	
Residence	Urban	39	12.7
	Semi-urban	09	2.9
	Rural	259	84.4
Education	Illiterate	204	66.4
	Up to intermediate	76	24.8
	Higher	27	8.8
Occupation	Professional	06	2.0
	Skilled	67	21.8
	Semi-skilled	93	30.3
	Unskilled	141	45.9
Social class	Upper	41	13.4
	Upper middle	93	30.3
	Middle	65	21.2
	Lower middle	53	17.3
	Lower	55	17.9

Table 3: Distribution of study subjects as per their habits.

Habits	Number	%	
Smoking	Yes	82	26.7
	No	225	73.3
Alcohol	Yes	108	35.2
	No	199	64.8
Coffee	Yes	17	5.5
	No	290	94.5
Tea	Yes	277	90.2
	No	30	9.8

Majority were from rural area i.e. 84.4%, illiterate i.e. 66.4% and occupied in the unskilled class i.e. 45.9%. this socio demographic picture is due to the location of the study hospital which is located in the rural and tribal area.

But majority were found to be belonging to upper middle class i.e. 30.3%.

Table 4: Distribution of study subjects as per the BMI and NSAID use.

Variable		No.	%
BMI (kg/m ²)	Underweight (< 18.5)	32	10.4
	Normal (18.5-24.99)	179	58.3
	Overweight and obese (≥25)	96	31.3
NSAID use	Yes	183	59.6
	No	124	40.4

Majority were nonsmokers (73.3%), non-alcoholics (64.8%), non-coffee users (94.5%). But tea use was found to be present in 90.2% of the study subjects.

Table 5: Prevalence of acid peptic disease.

Acid peptic disease	Number	Percentage
Yes	117	38.1
No	190	61.9
Total	307	100

Table 6: Association of various factors with acid peptic disease.

Factors		Acid peptic disease		Chi square	P value	Odds Ratio (95% CI)
		Yes	No			
Age	18-25	07 (23.3%)	23 (76.7%)	10.9215	0.02746	-
	26-35	21 (29.2%)	51 (70.8%)			
	36-45	33 (49.3%)	34 (50.7%)			
	46-55	21 (40.4%)	31 (59.6%)			
	≥ 55	40 (46.5%)	46 (53.5%)			
Sex	Male	64 (40.5%)	94 (59.5%)	0.8009	0.3708	1.27 (0.7994-2.018)
	Female	52 (34.9%)	97 (65.1%)			
Residence	Urban	17 (35.4%)	31 (64.6%)	0.06587	0.3987	0.8719 (0.4588-1.657)
	Rural	100 (38.6%)	159 (61.4%)			
Education	Illiterate	81 (39.7%)	123 (60.3%)	0.8086	0.3685	1.298 (0.7879-2.137)
	Literate	34 (33.7%)	67 (66.3%)			
Occupation	Unskilled and semi-skilled	92 (39.3%)	142 (60.7%)	0.02384	0.8773	1.088 (0.6216-1.906)
	Skilled and professional	25 (37.3%)	42 (62.7%)			
Social class	Upper and upper middle	40 (29.8%)	94 (70.2%)	6.271	0.01227	12.47 (4.274-36.37)
	Middle, lower middle and lower	77 (44.5%)	96 (55.5%)			
Smoking	Yes	36 (43.9%)	46 (56.1%)	1.274	0.2600	1.391 (0.8321-2.326)
	No	81 (36%)	144 (64%)			
Alcohol use	Yes	54 (50%)	54 (50%)	9.223	0.00239	2.159 (1.334-3.493)
	No	63 (31.7%)	136 (68.3%)			
Coffee intake	Yes	07 (41.2%)	10 (58.8%)	0.0001184	0.9913	1.145 (0.4237-3.097)
	No	110 (37.9%)	180 (62.1%)			
Tea intake	Yes	111 (40.1%)	166 (59.9%)	3.812	0.02545	2.675 (1.059-6.754)
	No	06 (20%)	24 (80%)			
Overweight and obese	Yes	36 (37.5%)	60 (42.5%)	0.0004788	0.9825	0.963 (0.5854-1.584)
	No	81 (38.4%)	130 (61.6%)			
NSAID use	Yes	91 (49.7%)	92 (50.3%)	24.71	0.000000665	3.728 (2.215-6.274)
	No	26 (21%)	98 (79%)			

Majority of study subjects had normal BMI (58.3%). But the overall prevalence of overweight and obesity was also quite high (31.3%). Majority were found to be using NSAIDs (59.6%). This may be due to location where majority are unskilled and hard working. Thus, to relieve

the body pains, they are using the NSAIDs. The prevalence of acid peptic disease was found to be very high in the present study. That is 38.1% of the study subjects were found to be suffering from acid peptic disease.

Table 6 shows association between various factors and acid peptic disease. The prevalence of acid peptic disease was significantly increased as the age increased. Males were 1.27 times more likely to have acid peptic disease than females, but this difference was not significant. Prevalence of APD was more in rural dwellers than their urban counterparts but this difference was not statistically significant. Prevalence of APD was more in illiterates than literates but this difference was not statistically significant. Prevalence of APD was significantly more in lower class people than upper class as they were found to be 12.47 times more likely to develop APD. Even though prevalence of APD was more in smokers than nonsmokers, but the difference was not statistically significant. But alcoholics were significantly two times more likely to develop APD than non-alcoholics. Coffee intake was not associated with APD, but tea intake was significantly associated with APD. Overweight and obesity was not found to be associated with APD. Prevalence of APD was significantly higher among NSAID users and they were 3.7 times more likely to develop APD than those who did not use the NSAID.

DISCUSSION

The prevalence of acid peptic disease was found to be very high in the present study i.e. 38.1%. This was very high compared to the available literature. The prevalence of acid peptic disease was significantly associated with increasing age, lower social class, alcohol use, tea use and NSAID use. Acid peptic disease was not found to be associated with sex, residence, literacy, smoking, coffee intake, and obesity.

Wang FW et al found a prevalence of APD as 9.4% which is very less compared to the prevalence found in the present study.⁹ They also reported that the prevalence of gastric ulcer was 4.7%, the prevalence of duodenal ulcer was 3.9% and the proportion of patients having both were 0.9% in their study.

The authors found that high BMI was associated with APD. But authors found that it was not related to high BMI. They also noted that APD was associated with current smoking, but authors did not find any such association. The authors stated that the higher the education, lesser the incidence of PUD but here also authors did not find any such association.

Levenstein S et al reported that prevalence of APD was high in those with school drop outs but authors did not find any association between literacy status and APD.¹⁰ When they adjusted other factors like lack of sleep, habit of smoking, habit of alcohol, habit of skipping the breakfast they found that the risk of APD with school dropout decreased by 21.7%. when the authors adjusted only factors like stress and psychological characteristics they found that the risk of APD reduced greatly by 55.5%. the authors concluded that the analgesic use may

be related to APD which authors also found that there is an association between NSAID use and APD.

Everhart JE et al found that the incidence of APD was 0.527% over a period of one year.¹¹ The authors found that the risk of APD increased with increasing age which is in line with the findings of the present study. The author also found that lower income was related with APD which is in line with the findings of the present study. The authors also noted that body pain was also related to APD. Those with body pains tend to take NSAID and chronic use can result in APD. Authors also found similar findings. The authors predicted role of smoking in APD, but authors did not find any such association.

Talamini G et al found that smoking was not related to APD which is in line with the findings of the present study.¹² They also noted that drinking was also not related to APD, but authors found a strong association between alcohol use and APD. On multivariate analysis, the authors found that only NSAID use was strongly predicting the duodenal ulcer. Authors also found a strong association between NSAID use and APD.

Stack WA et al noted that patients who were positive for *H. pylori* were at 3.3 times more risk of developing bleeding than those patients who were negative for *H. pylori*.¹³ Smokers were 2.2 times more at risk of bleeding than nonsmokers. Authors did not find a strong association between smoking and APD. In their study the patients with aspirin use were seven times more likely to have bleeding than those without aspirin use. Those using NSAIDs were found to be 10 times more at risk of bleeding than those without NSAID use. Authors also found a strong association between NSAID use and APD.

Rosenstock S et al found that smokers were 3.8 times more at risk of developing APD than nonsmokers. But in the present study authors did not find a strong association between smoking and APD. Authors did not find any strong association between NSAID use and APD, but authors found a strong association between NSAID use and APD. The author reported that even moderate leisure physical activity was protective against the APD.

CONCLUSION

Prevalence of acid peptic disease was found to be very high in the present study. Hence there is a need to institute the preventive and control measures to bring down the prevalence. At the same time the people in the surroundings should be made aware of this health problems and its risk factors.

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