

ORIGINAL ARTICLE

SYMPTOMATIC GASTROESOPHAGEAL REFLUX AMONGST HOSPITAL PERSONNEL IN SOUTH INDIA

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ABSTRACT

INTRODUCTION: Prevalence of gastro-esophageal reflux (GER) disease is on the rise in South Asian countries. Though there are reports of GER prevalence amongst various ethnic populations there are fewer reports on its prevalence in different occupational groups. **MATERIALS AND METHODS:** To study the prevalence of GER amongst hospital personnel at the tertiary referral hospital in south India. **RESULTS:** Of the 1468 hospital personnel, the overall prevalence of GER was 28.5%. It was highest amongst the clerical staff (31.3%) and least among nursing students (3%). Eighty five percent of the symptomatic GER personnel were young; those below the age of 35 years had symptoms for less than 6 months while those above 55 years had symptoms for more than 6 months. Combination of reflux symptoms with ulcer or dysmotility type dyspepsia was the dominant type amongst all cadres. The nursing staff (62.5%) preferred antacids whereas the doctors (63%) preferred PPI. **CONCLUSION:** GER prevalence is not uncommon amongst the hospital personnel. It is significantly more common amongst doctors, clerical staff and housekeepers.

Key words: Gastroesophageal reflux, hospital personnel, medical personnel, prevalence

INTRODUCTION

Gastroesophageal reflux disease (GERD) is a worldwide problem associated with significant morbidity. In South Asian population the prevalence of GERD is 29.8%^[1,2] with a rising prevalence due to westernization of diet patterns and large changes in lifestyle habits. There are a few prevalence figures on gastro-oesophageal reflux (GER) from the Indian subcontinent

ranging from 7.6%^[3] in the general population to 16.2% amongst hospital personnel in a north Indian hospital^[4] (4) and 48.9% amongst medical students in south India.^[5] Most of the studies from India indicate that GERD is often mild;^[6] Barrett's esophagus is on the rise.^[7]

The aim of the present study was to determine the prevalence and characteristics of GER

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among hospital personnel at a tertiary referral centre in South India.

MATERIALS AND METHODS

The cohort consisted of doctors, the nursing staff including nursing students, clerical and housekeeping staff. All the subjects in all cadres were included. No randomization was done. After formal ethics committee approval, a structured questionnaire was completed using a direct interview method of all the members belonging to the above groups. Informed consent was obtained from each individual. The questionnaire included age, gender, presence or absence of heartburn/regurgitation, duration of the symptoms, variation of symptoms in relation to posture, absenteeism from work in the preceding six months and choice of anti-secretary drugs.

Statistics

Odds ratio and trend chi square was calculated wherever applicable.

RESULTS

Of the 1468 study subjects, 319 (21.7%) were doctors, 262 were staff nurses (17.8%), 351 (23.9%) were nursing students, 300 (20.4%) belonged to the clerical staff and 236 (16.1%) were housekeepers. Most of the nursing students were young females. In the rest of the study group, males dominated (age range: 16 and 55 years).

Overall, 419 (28.5%) hospital personnel had GER symptoms. Majority (80%) were between 36 and 55 years. The mean age for men was 40.4 years and for women 33.9 years. Table 1

Table 1: Designation by mean age and symptoms

Designation	Median age (yrs)	GER no. (%)
Asst. professors (155)	44	73 (47.1)
Doctors (164)	31	41 (25.0)
Nurses (262)	41	56 (21.4)
Nursing students (351)	21	13 (3.7)
Technical assistants (300)	49	131 (43.7)
House keeping (236)	45	105 (44.5)

Rank correlation coefficient between median age and proportion with symptoms highly significant. ($P < 0.001$)

shows the prevalence of GER in various categories of the hospital staff. It was lowest amongst the nursing students, nurses and junior doctors. The difference in prevalence among the various occupational groups was highly significant ($P < 0.0001$). This difference was more due to the difference in median age of the occupational groups rather than due to the profession *per se*. Thus, the youngest of the group i.e. nursing students with a mean age of 21 had 3.7% GER symptoms while the Assistant Professors and the Technical assistants had a higher mean age of 44 and 49 years with a prevalence of 47.1% and 43.7% respectively. The Rank Correlation coefficient between median age and proportion with symptoms was highly significant. ($P < 0.001$). Thus the influence of age was more important than occupation.

As age increased the prevalence of GER also increased significantly. Thus a positive trend was noticed with odds of disease increasing by 10.1 (5.5 to 19.7), 17.5 (9.6 to 32.2), 18.9 (10.4 to 34.8) and 10.9 (4.7 to 26.0) times correspondingly in the age-groups 26-35, 36-45, 46-55 and 56-65 compared to 16-25 years (trend chi sq $P < 10^{-5}$) [Table 2]. The duration of the symptoms was longer in the older age group. i.e. almost two-thirds of those above the age of 55 years had symptoms for

Table 2: Age, gender ratio and duration of symptoms

Age group	Male:female ratio	Individuals with GER		
		Duration no (%)		Odds ratio (± 1.96 CI)
		<6 mo	>6 mo	
16-25 (n=375)	80:295 (1:3.7)	12 (85.7)	2 (14.3)	
26-35 (n=255)	146:109 (1.3:1)	62 (86.1)	11 (13.9)	10.1 (5.5 to 19.74)
36-45 (n=386)	193:193 (1:1)	96 (63.1)	56 (36.9)	17.5 (9.6 to 32.2)
46-5 (n=397)	239:158 (1.5:1)	87 (53.2)	77 (46.8)	18.9 (10.4 to 34.8)
56-65 (n=55)	28:27 (1:1)	6 (37.5)	10 (62.5)	10.9 (4.7 to 26.0)

Table 3: GER characteristics in different categories of hospital personnel

Designation	M/F	Mean age \pm SD	<6 mo>6 mo		Upright supine combined		
			No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Doctors	93/21	38.84 \pm 8.92	95 (84.3)	19 (16.7)	19 (16.7)	46 (40.4)	49 (42.9)
Nurses	0/56	41.73 \pm 7.45	45 (81.4)	11 (19.6)	15 (26.8)	11 (19.6)	30 (53.6)
Nursing students	3/10	19.08 \pm 1.26	11 (84.6)	2 (15.4)	1 (7.7)	4 (30.8)	8 (61.5)
Clerical staff	98/33	47.08 \pm 5.99	74 (56.5)	57 (43.5)	31 (23.7)	29 (22.1)	71 (54.2)
Housekeepers	70/35	44.75 \pm 8.85	38 (36.2)	67 (51.2)	6 (5.7)	35 (33.3)	64 (60.9)

Upright, Supine, Combined—indicates postures during which the study population had predominant GER symptoms

Table 4: Choice of therapy

Designation	Antacids no (%)	H2RA no (%)	PPI no (%)	Combination of anti-secretory drugs no (%)
Doctors	26 (23)	16 (14)	72 (63)	none
Nurses	35 (62.5)	5 (9)	10 (18)	6 (10.5)
Nursing students	11 (84.6)	none	2 (15.4)	none
Clerical staff	50 (38)	25 (19)	9 (7)	47 (36)
Housekeepers	45 (43)	22 (21)	11 (10.5)	27 (25.5)

H2RA=H2 receptor antagonists, PPI=Proton pump inhibitors

more than 6 months, while 85% of those below 35 years had symptoms of less than 6 months. Except for the housekeeping staff rest of the hospital personnel had symptoms for less than 6 months.

Forty three percent of individuals (all categories) with GER had symptoms in both upright and supine posture [Table 3]. Fewer subjects amongst the nursing students and housekeepers were upright refluxes. Seventy three (18%) staff members had an upper endoscopy and majorities (60%) were men. Antacids were preferred by the nurses and housekeeping staff, while proton pump Inhibitors by the doctors [Table 4]. Absenteeism due to GER

was not uncommon amongst the symptomatic group (59.8% compared to 40.2%).

DISCUSSION

Several studies have reported GER prevalence in the general population. Up to 44% of the US population experience GERD symptoms at least once a month, 20% of them, once a week and 7% daily.^[8,9] Overall, the weekly prevalence of GERD is estimated to be 10-20% in the West and less than 5% in Asian countries.^[10] In the past few years, there has been an increase in the frequency of GERD in Asia ^[11-16] with a 4-fold increase in the frequency of heartburn in recent times. In a study from Tehran,^[16] daily

heartburn and/or acid regurgitation was found in 2.1% and 4.7% among university students and blood donors.

Fewer studies have looked into select occupational groups such as those on dialysis,^[17] medical students',^[5] and factory workers.^[18]

The present cross-sectional study amongst hospital personnel has highlighted a few issues on characteristics of GER in a tertiary urban centre. Almost one-third of individuals had GER with an increasing trend with an increase in age. The duration of symptoms was longer in the older age group and amongst housekeepers. The lower prevalence amongst senior doctors and nurses may be related to greater awareness of pathophysiology and risk factors of GER.

In an interview based survey^[18] in 2 populations, one belonging to 424 subjects of S. Matteo Hospital staff and 344 subjects of the Military Factory of Pavia, there were no GER related absenteeism. In our study, a significant number of absenteeism was related to GER.

Summarizing, GER prevalence is common amongst hospital personnel in south India especially amongst the older age groups irrespective of the post they hold. Reflux symptoms are mild with less absenteeism; GER often presents in combination with other types of dyspepsia.

Similar studies from different regions of the Indian subcontinent amongst various occupational groups are necessary. This will provide information on the burden of GER in these categories and help various private

and public organizations to take up preventive measures against GER.

REFERENCES

1. Goh KL, Chang SC, Fock KM, Ke MY, Park HJ, Lam SK. Gastro-oesophageal reflux disease in Asia. *J Gastroenterol. Hepatol* 2000;15:230-8.
2. Wong WM, Lai KC, Lam KF, Hu WM, Hu WHC, Lam CL, *et al*. Prevalence, clinical spectrum and health care utilization of gastro-oesophageal reflux disease in a Chinese population: A population-based study. *Aliment Pharmacol Therap* 2003;18:595-604.
3. Bhatia SJ, Reddy DN, Ghoshal UC, Jayanthi V, Abraham P, Choudhuri G, *et al*. Epidemiology and symptom profile of gastro-oesophageal reflux disease in the Indian population: Report of the Indian Society of Gastroenterology Task Force. *Indian J Gastroenterol* 2011;30:118-27.
4. Sharma PK, Ahuja V, Madan K, Gupta S, Raizada A, Sharma MP. Prevalence, severity and risk factors of symptomatic gastro-oesophageal reflux disease among employees of a large hospital in Northern India. *Indian J Gastroenterol* 2011;20:128-34.
5. Suresh Kumar P, M Karthik Selvaraj, Jayanthi V. Prevalence of symptoms of gastro-esophageal reflux amongst medical students. *Indian J Gastroenterol* 2006;25:168-9
6. Jayanthi V. Severity of esophagitis in southern Indians. *Indian J Gastroenterol* 2002;21:205.
7. Mathew P, Joshi AS, Shukla A, Bhatia SJ. Risk factors for Barrett's esophagus in Indian patients with gastroesophageal reflux disease. *J Gastroenterol Hepatol* 2011;26:1151-6.
8. Petersen H. The prevalence of Gastroesophageal reflux disease. *Scand J Gastroenterol Suppl* 1995;211:5-6.
9. Locke GR 3rd, Talley NJ, Fett SL, Zinsmeister AR, Melton LJ 3rd. Prevalence and clinical spectrum of gastroesophageal reflux: A population-based study in Olmsted County, Minnesota. *Gastroenterology* 1997;112:1448-56.

10. Dent J, El-Serag HB, Wallander MA, Johansson S. Epidemiology of gastro-oesophageal reflux disease: A systematic review. *Gut* 2005;54:710-7.
11. Malekzadeh R, Nasser-Moghaddam S, Sotoudeh M. Gastroesophageal reflux disease: The new epidemic. *Arch Iranian Med* 2003;6:127-40.
12. Pourshams A, Rahmani AR, Hatami K. Gastroesophageal reflux disease in Iran. *Govaresh* 2005;10:48-53.
13. Freston JW, Asaka M, Chiba T, Howden CW, Hunt RH, Sugano K, *et al*. Acid-related disorders of the new millennium: European, Japanese, and North American perspectives. *Eur J Gastroenterol Hepatol* 1998;10:S1-40.
14. Fujimoto K. Prevalence and epidemiology of Gastro-Esophageal Reflux Disease in Japan. *Aliment Pharmacol Ther* 2004;20:5-8.
15. Ho KY, Kang JY, Seow A. Prevalence of gastrointestinal symptoms in a multiracial Asian population, with particular reference to reflux-type symptoms. *Am J Gastroenterol* 1998;93:1816-22.
16. Nourae M, Razjouyan H, Assady M, Malekzadeh R, Nasser-Moghaddam S. Epidemiology of Gastroesophageal Reflux Symptoms in Tehran, Iran: A Population-Based Telephone Survey. *Arch Iranian Med* 2007;10:289-94.
17. Anderson JE, Yim KB, Crowell MD. Prevalence of Gastroesophageal Reflux Disease in Peritoneal Dialysis and hemodialysis patients. *Adv Perit Dial* 1999;15:75-8.
18. Valle C, Broglia F, Pistorio A, Tinelli C, Perego M. Prevalence and Impact of Symptoms Suggestive of Gastroesophageal Reflux Disease. *Dig Dis Sci* 1999;2004;44:1842-52.

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