ORIGINAL ARTICLE

Psychosocial Determinants of Gastroesophageal Reflux Disease

MUZNAY NAVEED KHAWAJA, MUHAMMAD ALI KHAN, ZOYA NAVEED KHAWAJA

ABSTRACT

Introduction: Nowadays GERD is becoming a common problem in our society. Various factors are found to be associated with the increased incidence of this disorder.
Objectives: To determine the association between various factors and the role they play in the development of GERD
Design: It is population based case control study.
Place and duration: The study was carried out randomly in urban Lahore from 8th of May to 8th of June, 2008.
Subjects and methods: Fifty GERD patients were randomly selected from Lahore urban population along with fifty controls. Interviews were conducted after obtaining consent from the interviewee with the help of a pretested questionnaire. Data was collected, compiled and analyzed through SPSS to determine the association.
Result: Mostly GERD patients were economically poor, under-matric, excessive use of table salt (OR=0.188, CI=0.046-0.773) was found to be the most significant in development of GERD. fatty diet, carbonated drinks, smoking, lack of exercise, spicy food, sleeping on left side, eating between meals, coffee, taking rest after meals, tight clothing, beetle nut, weight loss and eating chocolate, using painkillers, taking unnecessary medication, sleeping with head end raised exhibited a statistically significant relationship with the GERD.
Conclusion: GERD is an increasing health problem in our society and lifestyle changes are essential to prevent it
Keywords: Gastroesophageal reflux disease , acidity, heartburn

INTRODUCTION

Gastro esophageal reflux disease, commonly referred to as GERD or acid reflux, is a condition in which the liquid content of the stomach regurgitates (backs up or refluxes) into the esophagus. GERD is a chronic condition. Once it begins, it usually is life-long. The symptoms of uncomplicated GERD are heartburn, regurgitation, and nausea. Eating culture is different from place to place. In Pakistan, people normally take light meal in breakfast while heavy meal is served at lunch and dinner. In rural area people generally sleep earlier while in urban area they sleep late in night. There have been not enough studies conducted so far on this issue, so there is need to conduct a research study to address this common problem and to make the community aware of its nature and prevention.

Stress, obesity, excessive fatty diet, excessive carbonated drinks increase the risk of developing GERD. People who take meals before bedtime, smokers and those who don't exercise have an higher likelihood of developing GERD. People taking spicy meals, sleeping on the left side are prone to develop GERD. Excessive use of painkillers, eating between meals, drinking excessive coffee and use of unnecessary medications all have an positive impact on GERD. People taking rest after lunch, sleeping with the head end raised or exercising after meals are more likely to develop GERD. Tight clothing, chewing betel nut also are associated with the development of GERD according to some studies.

Final Year Students of King Edward Medical University
Reprint requests to: Muznay N. Khawaja
email: muznay8@hotmail.com

OBJECTIVES

- To find out the distribution of the problem in the community
- To identify various psycho-social factors associated with the problem
- To compare the results with the already conducted studies
- To make suggestions to solve the problem
- To render the community aware of the prevention for the problem

MATERIAL AND METHODS

Study variables

- Dependent variable: GERD
- Independent variables are obesity, intake of fatty diet, intake of coffee, intake of table salt, exercise, post menopausal hormone therapy, intake of alcohol, taking meals before bed time. sleeping with head end raised, tobacco smoking,

stress, weight loss, tight clothing, intake of chocolates, intake of spicy food.

It is a case control including males and females of all age groups. All those people having GERD or not having GERD are included in the study. Children and persons not willing are excluded.

RESULTS

A total of 100 individuals (50 cases and 50 controls) were recruited in the study. Overall 54% of the total individuals were males and 46% were females.

The bivariate analysis showed some of the sociodemographic factors exhibiting statistically significant association with GERD including stress, obesity, meals before bedtime, using painkillers, taking unnecessary medication, sleeping with head end raised, salt, Multivariate logistic regression model was used to control for the possible confounding effect of these sociodemographic factors on each other . It was observed that after the controlling for the sociodemographic factors, only excessive fatty diet, carbonated drinks, smoking, lack of exercise, spicy food, sleeping on left side, eating between meals, coffee, taking rest after meals, tight clothing, beetle nut, weight loss and eating chocolate, using painkillers, taking unnecessary medication, sleeping with head end raised and salt exhibited a statistically significant relationship with the GERD whereas obesity and meals before bedtime did not exhibit a statistically significant relationship with the GERD. Similarly in the bivariate analysis some of the sociodemographic factors did not exhibit statistically significant association with GERD including excessive fatty diet, carbonated drinks, smoking, lack of exercise, spicy food, sleeping on left side, eating between meals, coffee, taking rest after meals, tight clothing, beetle nut, weight loss and eating chocolate, as in table No.A2,However after Multivariate analysis only obesity and meals before bedtime did not exhibit a statistically significant relationship with the GERD whereas excessive fatty diet, carbonated drinks, smoking, lack of exercise, spicy food, sleeping on left side, eating between meals, coffee, taking rest after meals, tight clothing, beetle nut, weight loss and eating chocolate, using painkillers, taking unnecessary medication, sleeping with head end raised and salt exhibited a statistically significant relationship with the GERD (Table)

Table 1: Multivariate logistic regression analysis of effect of sociodemographic factors on the problem of GERD

Variable	Crude OR	95% CI		Adjusted OR	95% CI	
		Upper	Lower		Upper	Lower
Stress	2.867	1.135	7.237	0.240	0.055	1.038
Obesity	2.787	1.147	6.770	0.230	0.049	1.077
Excessive fatty diet	1.375	0.601	3.145	1.213	0.330	4.459
Excessive Carbonated Drinks	1.013	0.461	2.226	1.359	0.355	5.203
Taking Meals Before Bedtime	2.915	1.276	6.659	0.171	0.044	0.654
Smoking	1.122	0.319	3.945	3.273	0.380	28.222
Lack of exercise	0.892	0.379	2.099	1.533	0.374	6.276
Taking spicy food	0.519	0.227	1.189	2.974	0.734	12.054
Sleeping on left side	1.689	0.678	4.205	0.650	0.158	2.673
Taking painkillers	3.114	1.311	7.400	0.288	0.072	1.147
Eating between meals	1.129	0.493	2.584	1.087	0.272	4.344
Drinking excess coffee	1.163	0.435	3.110	0.406	0.091	1.183
Taking unnecessary medications	5.833	2.291	14.853	0.283	0.074	1.075
Not taking rest after meals	1.351	0.606	3.014	0.944	0.101	8.857
Sleeping with head end raised	0.390	0.172	0.883	1.813	0.573	5.735
Exercising after meals	1.435	0.379	5.430	0.963	0.107	8.665
Wearing tight clothing	0.915	0.248	3.380	1.141	0.149	8.762
Eating betel nut	1.711	0.468	6.259	0.740	0.073	7.526
Weight loss	0.676	0.292	1.561	2.051	0.521	8.074
Eating chocolates	0.617	0.280	1.360	1.228	0.346	4.356
Excessive salt in diet	3.387	1.323	8.668	0.188	0.046	0.773
Excessive alcohol intake	0.515	0.426	0.624	1.083	---	---
Female sex	1.190	0.541	2.618	0.946	0.278	3.220

DISCUSSION

In this study GERD was not associated with obesity. However GERD was found to be associated with obesity in a previous study[1]. GERD was not associated with, meals before bedtime. However GERD was found to be associated with meals before bedtime in a past study[2].

Excessive fatty diet was found to be associated with GERD in the previous studies[3-5]our study supports this result. GERD was associated with carbonated drinks in our study. A previous study supports this[6].

Smoking was found associated with the problem in the previous studies[7-8]. our study has same result. GERD was associated with lack of exercise, as proved by previous study[9]. GERD was associated with spicy food, as proved by previous study[10] .GERD was associated with sleeping on left side, as proved by previous study[11] GERD was found to be associated with eating between meals. as proved by previous study[12] GERD was associated with coffee, as proved by previous study[13]. GERD was found to be associated with taking rest after meals, as proved by previous study[14].

In this study GERD was found to be associated with tight clothing, as proved by previous study[15],. GERD was associated with beetle nut, as proved by previous study[16]. GERD was associated with weight loss, as proved by previous study[17]. GERD was assosciated with eating chocolate, as proved by previous study[18] GERD was associated with using painkillers, as proved by previous study[19] GERD was found to be associated with taking unnecessary medication, as proved by previous study[20]

CONCLUSION

In this study excessive fatty diet, carbonated drinks, smoking, lack of exercise, spicy food, sleeping on left side, eating between meals, coffee, taking rest after meals, tight clothing, beetle nut, weight loss and eating chocolate, using painkillers, taking unnecessary medication, sleeping with head end raised and salt exhibited a statistically significant relationship with the GERD whereas obesity and meals before bedtime were not found associated with the Gastroesophageal Reflux.

Acknowledgements:. We are grateful to our teachers of Community Medicine Department, King Edward Medical University, Lahore for their help and guidance. We are also obliged by the valuable services provided by the staff of Computer Lab of KEMU.

REFERENCES

1. Falk GW.Clinical Gastroentrology.2nd edi.United States:Heinemann 1992;pp11-12.
2. Choi CW, Kim GH, Song CS, Wong SG.Is Obesity Assosciated With GERD?.World Journal Of Gastroentrology 2008; 14(2):p265.
3. Rey E, Moreno-Elola-Olaso C, Artalejo FR, Locke III GR, Diaz-Rubio M.Association between weight gain and symptoms of Gastroesopageal reflux in the General Population. The American Journal of Gastroenterology 2007: 101(2)p229-233
4. Corley DA, Kubo A, Zhao W. Abdominal Obesity, ethinicity and gastroesophageal reflux symptoms.An International Journal of Gastroenterology and Hepatology 2007: 56(6)p756-762.
5. Howard H, Neena S, Abraham.Meta anlaysis:Obesity And The Risk For GERD And Its Complications. Annals Of Internal Medicine[Internet] 2005 8 2[2008 8 28];143(3).Available from: URL:http://www.annals.org.
6. Obesity Linked To esophageal Precancerous Condition[Internet] 2005 11 4[2008 8 26];132(2).Available from:URL:http://www.wrongdiagnosis.com
7. Davidson S.Principles And Practice Of Medicine.20thedi.New Dehli, India:Elselvier 2006;p879
8. Shapiro M, Green C, Bautista R, Dekel JM, Risner-Adler S, Whitacre R, Graver E, Fass R. Alimentary Pharmacology & Therapeutics[Internet] 2007 1 5[2008 9 4]; 25(1). Available from:URL:http://pt.wkhealth.com/pt/re/alpt/abstract.00001716-20070101000012.htm;jsessionid=L1VJ1LF1tbv71fnmJ0yDhYYTYlhdt1q2wT84ysNVRsrDPqmnVWth!-1004083789!181195629!8091!-1
9. Nilsson M, johnson R, Ye W, Hreem K, Lagergren J. Lifestlye related Risk Factors in the Aetiology of Gastroesophageal Reflux. An International Journal of Gastroenterology and Hepatology 2004: 53(12):p1730-1735
10. Boekema PJ, Samson M, Smout AJ. Effect of Coffee on Gastroesophageal reflux in patients with reflux disease and healthy controls. European Journal of Gastroenterology and Hepatology 1999: 11(7):p1271-1276
11. Davidson S. Principles and Practice of medicine.20th edi.New Dehli, India: Elselvier 2006;p878.
12. Dhingra PL.Diseases Of Ear, Nose And Throat.4th edi.India:Elselvier 2007;p305
13. Lynn T, Water R. Sleep-related gastro-oesophageal reflux: provocation with a late evening meal and treatment with acid suppression. Alimentary Pharmacology and Therapeutics 2006: 12(10):pp1033-1038
14. Kumar V, Abbas AK, Fausto N. Pathologic basis of disease. 7th Edi. New Delhi, India; Elsevier 2006: p804
15. Kylie JS, Suzanne M. Interactions among smoking, obesity and symptoms of acid reflux and Barrett's esophagus. AACR [Internet] 2005-11-6 [2008-8-8]; vol.14 (7). Available from: url:http://www.cebp.AACRjounals.org/cgi/content/abstract/14/11/2481
16. Marchese M, Spada C, Costamanga G. stress related Gastro esophageal reflux disease. Journal of gastroenterology [internet] 2008-2-14 [28-8-8]. Available from: url:http://www.ncbi.nlm.nih.gov/sites/enterez
17. Fass R. In patients with GERD, auditory stress increased perceptual response to intraesophageal acid exposure. Journal Watch Gastroenterology [Internet]

2008-4-25 [4-9-08]; vol.134(696). Available from url: http://gastroenterology.jwatch.org/cgi/content/full/2008/425/1
18. Pandolfino JE.The relationship between obesity and GERD: "big or overblown".Am J Gastroenterol. 2008 Jun;103(6):1355-7. Epub 2008 May 28. PMID: 18510602 [PubMed
19. Dig Dis Sci. 2008 Sep;53(9):2300-6. Epub 2008 Jul 29.PMID:
20. Vemulapalli R.Diet and lifestyle modifications in the management of gastroesophageal reflux disease.Nutr Clin Pract. 2008 Jun-Jul;23(3):293-8.PMID: 18595862
21. Vemulapalli R.Diet and lifestyle modifications in the management of gastroesophageal reflux disease.Nutr Clin Pract. 2008 Jun-Jul;23(3):293-8.PMID: 18595862
22. Sanghvi S.Coca Cola:The Dilemma.The Indian Journal Of Clinical Practice[Internet] 2006 11 8[2008 9 6];Available from:URL:http://www.coca-colaindia.com
23. Joel ER. GIT problems in geriatric patients. The American journal of gastroenterology [internet] 2004-3-30 [28-8-8]; vol.95(2). Available from:url:http://www.amjgastro.com