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 reflexes) into the esophagus. GERD is a chronic condition. Once it begins, it usually is lifelong. 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.

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, 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>
<thead>
<tr>
<th>Variable</th>
<th>Crude OR</th>
<th>95% CI</th>
<th>Adjusted OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>2.867</td>
<td>1.135</td>
<td>0.240</td>
<td>0.055</td>
</tr>
<tr>
<td>Obesity</td>
<td>2.787</td>
<td>1.147</td>
<td>0.230</td>
<td>0.049</td>
</tr>
<tr>
<td>Excessive fatty diet</td>
<td>1.375</td>
<td>0.601</td>
<td>1.213</td>
<td>0.330</td>
</tr>
<tr>
<td>Excessive Carbonated Drinks</td>
<td>1.013</td>
<td>0.461</td>
<td>1.359</td>
<td>0.355</td>
</tr>
<tr>
<td>Taking Meals Before Bedtime</td>
<td>2.915</td>
<td>1.276</td>
<td>0.171</td>
<td>0.044</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.122</td>
<td>0.319</td>
<td>3.273</td>
<td>0.380</td>
</tr>
<tr>
<td>Lack of exercise</td>
<td>0.892</td>
<td>0.379</td>
<td>1.533</td>
<td>0.374</td>
</tr>
<tr>
<td>Taking spicy food</td>
<td>0.519</td>
<td>0.227</td>
<td>2.974</td>
<td>0.734</td>
</tr>
<tr>
<td>Sleeping on left side</td>
<td>1.689</td>
<td>0.678</td>
<td>0.650</td>
<td>0.158</td>
</tr>
<tr>
<td>Taking painkillers</td>
<td>3.114</td>
<td>1.311</td>
<td>0.288</td>
<td>0.072</td>
</tr>
<tr>
<td>Eating between meals</td>
<td>1.129</td>
<td>0.493</td>
<td>1.087</td>
<td>0.272</td>
</tr>
<tr>
<td>Drinking excess coffee</td>
<td>1.163</td>
<td>0.435</td>
<td>0.406</td>
<td>0.091</td>
</tr>
<tr>
<td>Taking unnecessary medications</td>
<td>5.833</td>
<td>2.291</td>
<td>0.283</td>
<td>0.074</td>
</tr>
<tr>
<td>Not taking rest after meals</td>
<td>1.351</td>
<td>0.606</td>
<td>0.944</td>
<td>0.101</td>
</tr>
<tr>
<td>Sleeping with head end raised</td>
<td>0.390</td>
<td>0.172</td>
<td>1.813</td>
<td>0.573</td>
</tr>
<tr>
<td>Exercising after meals</td>
<td>1.435</td>
<td>0.379</td>
<td>0.963</td>
<td>0.107</td>
</tr>
<tr>
<td>Wearing tight clothing</td>
<td>0.915</td>
<td>0.248</td>
<td>1.141</td>
<td>0.149</td>
</tr>
<tr>
<td>Eating betel nut</td>
<td>1.711</td>
<td>0.468</td>
<td>0.740</td>
<td>0.073</td>
</tr>
<tr>
<td>Weight loss</td>
<td>0.676</td>
<td>0.292</td>
<td>2.051</td>
<td>0.521</td>
</tr>
<tr>
<td>Eating chocolates</td>
<td>0.617</td>
<td>0.280</td>
<td>1.228</td>
<td>0.346</td>
</tr>
<tr>
<td>Excessive salt in diet</td>
<td>3.387</td>
<td>1.323</td>
<td>0.188</td>
<td>0.046</td>
</tr>
<tr>
<td>Excessive alcohol intake</td>
<td>0.515</td>
<td>0.426</td>
<td>1.083</td>
<td>---</td>
</tr>
<tr>
<td>Female sex</td>
<td>1.190</td>
<td>0.541</td>
<td>0.946</td>
<td>0.278</td>
</tr>
</tbody>
</table>

DISCUSSION

In this study GERD was not associated with obesity. However GERD was found to be associated with obesity in a previous study. GERD was not associated with meals before bedtime. However GERD was found to be associated with meals before bedtime in a past study.
Excessive fatty diet was found to be associated with GERD in the previous studies.\(^5\)\(^6\) 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 associated 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**

17. Fass R. In patients with GERD, auditory stress increased perceptual response to intraoesophageal acid exposure. Journal Watch Gastroenterology [Internet]

