



## ORAL DEPENDENCY: A POTENTIAL RISK FACTOR FOR GASTRIC LESIONS

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### ABSTRACT

#### Objective:

To evaluate the correlation of oral addictions with the risk to develop the gastric lesions.

#### Place & Duration of the study:

The study was conducted at Isra University, Karachi and Hyderabad campus. From March 2024 to July 2025.

#### Methodology:

A cross sectional analytical study was done on 200 numbers of patients, both gender were included with any age range. The non-probability convenient sampling technique was adopted to enroll the patients after conformation of gastric lesion on gastroscopy and on the basis of history of the oral addiction and symptoms relatable. Patients with previous history of treatment and surgical intervention, any trauma and on chemotherapy were excluded. The finding were documented on proforma and data analyzed through SPSS. The qualitative data was presented in the form of Frequency and percentage, while the correlation was evaluated by applied Chi-square test. The P value was set at  $P \leq 0.05$ .

#### Results:

The Mean age of male was  $46.23 \pm 0.51$  and female was  $56.47 \pm 1.34$ . Out of 200 patients the male was 61% and female was 39%. About 30% males and 50% of females consumed pan with correlation of 0.001, niswar, gutka and tobacco showed significant correlation among both gender. The 60% erosive and 72% non-erosive with significant correlation 0.021 in both gender among gutka consumers, 28% erosive and 46% non-erosive with 0.054 in both gender of niswar users. 51% erosive and 41% non- erosive among tobacco, 30% erosive and 50% non-erosive found in pan users. While 0.021% in users. 58% of non-erosive mucosal inflammation, 42% mucosa with erosions, and 34% ulceration was found on gastroscopy. 64% of male presented with epigastric pain, 72% females with epigastric discomfort, 65% of females with nausea, 43% females with vomiting, 61% females with bloating and 42% with oral ulcers. The positive correlation was found in epigastric pain and discomfort, nausea, vomiting and bloating in both genders.

#### Conclusion:

As the study results evidence the significant correlations of both genders with higher consumption of different oral tobacco based products, mostly pan, gutka, betel nuts, and niswar users. Mostly the erosive lesions were 60% in gutka, and 51% tobacco were reported. Non-erosive lesions were 72%

with gutka and 50% in pan consumers. Most of the lesions were non-erosive, and about 42% erosive which is quite alarming.

**Keywords:** gastritis, oral addictions, tobacco

## INTRODUCTION

Excessive use of oral addictions, smoking and alcohol are predisposing factors for different lesions of gastrointestinal tract. Common clinical manifestation are gastric ulcers, gastric reflux disease, gastric cancers, and others.<sup>1</sup> Gastritis is one of the inflammatory condition related to gastric mucosa diagnosed through endoscopy or radiography. Histopathological findings confirm the inflammation of the gastric mucosa.<sup>2</sup> Gastritis can be classify as acute and chronic according to etiology and histopathological conditions. Increase incidence of gastritis depending on some enterovirus conditions, H pylori, oral addictions and ischemia oral addictions.<sup>3,4</sup> The prevalence ratio in Asia is 51%.<sup>5</sup> Other important associated factors are life style and dietary habits, persistent use of different addictions like smoking, edible tobacco, alcohol and prolong use of drugs, anxiety and stress.<sup>6</sup> Smokeless tobacco refers as tobacco material consumed through mouth, chewing, and sniffing rather smoking. Different nicotine products are gutka, misri, manpuri and others.<sup>7,8</sup> The main purpose of the study is to evaluate the association of oral addictions either smoking or smokeless tobacco as commonly used in the community and their correlations with various gastric clinical manifestation and with gender based association.

## METHODOLOGY

Total 200 number of patients was enrolled in this cross-sectional analytical study. The patients was selected on the basis of non-probability convenient sampling. The study was conducted after taken an ethical approval from the concerned authority. The study was conducted at Isra university Karachi campus. The patients was included from any age group, both gander, and patients selected on the basis of history, gastroscopy and clinical presentation. The patients with the history of gastric treatment, autoimmune diseases, and carcinomas were excluded. Informed consent was taking before the selected, and data was collected through proforma. The qualitative data was presented in the form of frequency and percentage and to assess the correlation Chi-square test was applied and the level of significance was set at  $P < 0.05$ .

## RESULTS

In this cross sectional analytical study was done on 200 numbers of patients, The Mean age of male was  $46.23 \pm 0.51$  and female was  $56.47 \pm 1.34$ . Out of 200 patients the male was 61% and female was 39%.

Table 1.1 shows frequency of different types of oral addictions consumed by the enrolled population and also presents the correlation with gender. The significant correlation of both gender among pan, niswar, and gutka consumer.

| Table 1.1 Percentage of Different types of oral addictions used by targeted population among both genders and their correlation |      |        |         |
|---------------------------------------------------------------------------------------------------------------------------------|------|--------|---------|
|                                                                                                                                 | Male | Female | P value |
| Pan                                                                                                                             | 30%  | 50%    | 0.001   |
| Niswar                                                                                                                          | 28%  | 46%    | 0.024   |
| Gutka                                                                                                                           | 60%  | 72%    | 0.054   |
| tobacco                                                                                                                         | 56%  | 49%    | 0.654   |
| Manpuri                                                                                                                         | 34%  | 31%    | 0.258   |
| Bettle nuts                                                                                                                     | 73%  | 65%    | 0.321   |
| Supari                                                                                                                          | 69%  | 74%    | 0.513   |
| Mawa                                                                                                                            | 62%  | 65%    | 0.752   |
| Chi-square test was applied                                                                                                     |      |        |         |

Table 1.2 shows percentage of different types of oral addiction with various types of gastritis and population based correlations. The positive correlation was found among erosive and non-erosive gastritis with different edible addictions, like pan, gutka, niswar and tobacco.

| Table 1.2 Percentage of Different types of oral addictions with various types of gastritis population based correlation |         |             |         |
|-------------------------------------------------------------------------------------------------------------------------|---------|-------------|---------|
|                                                                                                                         | Erosive | Non erosive | P value |
| Pan                                                                                                                     | 30%     | 50%         | 0.001   |
| Niswar                                                                                                                  | 28%     | 46%         | 0.054   |
| Gutka                                                                                                                   | 60%     | 72%         | 0.021   |
| tobacco                                                                                                                 | 51%     | 41%         | 0.041   |
| Manpuri                                                                                                                 | 34%     | 31%         | 0.544   |
| Bettle nuts                                                                                                             | 73%     | 65%         | 0.321   |
| Supari                                                                                                                  | 69%     | 74%         | 0.462   |
| Mawa                                                                                                                    | 62%     | 65%         | 0.425   |
| Chi-square test was applied                                                                                             |         |             |         |

Table 1.3 shows the percentage of various types of oral addiction among different types of erosive and non-erosive gastritis with clinical gastroscopy findings. 58% among non-erosive presented with inflamed mucosa without erosions, 42% with erosive inflamed mucosa and 34% presented with gastric ulcers.

| Table 1.3 Percentage of Different clinical findings on gastroscopy among the patients |         |             |
|---------------------------------------------------------------------------------------|---------|-------------|
| Clinical Features                                                                     | Erosive | Non erosive |
| Gastric ulcer                                                                         | 34%     | -           |
| Inflamed mucosa with erosions (erythematous)                                          | 42%     | -           |
| Inflamed mucosa without erosions                                                      | -       | 58%         |
| Bleeding see petechiae, oozing, hematin                                               | 17%     | 2%          |

Table 1.4 shows percentage of different symptoms addressed by the different gender based population, the positive correlation of symptoms in both gender like epigastric pain and discomfort, and others are nausea, vomiting and bloating.

| Table 1.4 Percentage of Different symptoms addressed by the patients and correlation with gender |      |        |         |
|--------------------------------------------------------------------------------------------------|------|--------|---------|
| Symptoms                                                                                         | Male | Female | P value |
| Epigastric pain                                                                                  | 64%  | 41%    | 0.001   |
| Epigastric discomfort                                                                            | 54%  | 72%    | 0.041   |
| Nausea                                                                                           | 56%  | 65%    | 0.052   |
| vomiting                                                                                         | 28%  | 43%    | 0.049   |
| hematemesis                                                                                      | 2%   | 1%     | 0.741   |
| Melena                                                                                           | 1%   | 1%     | 0.845   |
| Bloating                                                                                         | 48%  | 63%    | 0.001   |
| Oral ulcers                                                                                      | 38%  | 42%    | 0.487   |
| Chi-square test was applied                                                                      |      |        |         |

## DISCUSSION

According to the study results the strong correlation was found between the oral additions and gastritis, one of the study was conducted on smokeless tobacco (SLT) and association with histopathological changes observed in gastric mucosa. Total 89 males and 19 females were included in this study, more than 60% of the patients was addicted from last 10 years. The strong relation was evidence between the smokeless tobacco and chronic gastric manifestations like ulcerations, erosions and neoplastic lesions.<sup>8</sup> Most of the common symptoms among others was dyspepsia, similar finding was taken in account like SLT leads to oral and gastric ulcers, erosive gastritis with marked inflamed mucosa and no gender based difference likewise.<sup>9</sup> A randomized trial was conducted among two different populations of Swedish, with usage of smoking and snus product. The results showed significant prevalence of gastric inflammation and hyperplastic lesions in snus users, and smokers documented higher rate of ulcerations. In present study 56% of smokers presented with erosive lesions like ulcers, but also found 73% in beetle nuts, 69% in supari and 62% of gutka users. Now non erosive lesions was found about 72% in gutka addict, 65% both in mava and supari users. The results are also in agreement with the mentioned study results.<sup>10</sup> In accordance with the results of the study was conducted at Karachi regarding the smokeless tobacco users reporting to the family clinical setups. There data was collected from the 502 patients >15 years of age, and the results documented the higher ratio of gastric lesions among the SLT users. Most of them using pan with tobacco, gutka and betel nuts. The results of the present study also documented the community of Karachi rated higher ratio of individuals taking SLT, and found 73% betel nuts user had erosive gastritis and 65% non-erosive lesions. Pan addict was reported 30% erosive and 50% non-erosive, and gutka user on higher side with 60% erosive and 72% non-erosive.<sup>11</sup> Another study was done in Karachi, Pakistan about the SLT consumers among the paramedical staff of tertiary care hospital with 600 staff 178 were paramedics and 382 were non paramedics staff of the hospital included in this study. The study results was shocking that 50% of the participants was found addicted of SLT of various form like gutka, niswar, betel nuts, and 97.1% were regular consumer, 66.2% were kept in mouth >30minutes. Now 30% were taking gutka and 20% taking chalia, likewise in the current study 60% male and 72% female were gutka user. 69% male and 74% female were chalia consumer.<sup>12,13</sup> In accordance with the results of one of the study about impact of SLT on oral mucosa from Rajasthan. Similarly in this study the gender are equally involved in consuming SLT like in study of Rajasthan.<sup>14</sup> Likewise SLT was also found as a risk factor for the development of gastric lesions.<sup>15</sup>

## CONCLUSION

As the study results evidence the significant correlations of both genders with higher consumption of different oral tobacco based products, mostly pan, gutka, betel nuts, and niswar users. Mostly the erosive lesions were 60% in gutka, and 51% tobacco were reported. Non-erosive lesions were 72% with gutka and 50% in pan consumers. Most of the lesions were non-erosive, and about 42% erosive which is quite alarming. The participants were reported positive symptoms of gastritis in both genders without age specification. All analyzed data shows significant unwanted situation of gastric lesions and very high number of oral tobacco consumers in selected population, increase risk for the development of gastric carcinomas or neoplastic lesions. Health care authorities play a vital role for concerned education of population and take all important steps to minimize the risk factors.

**Conflict of Interest:** No conflict of interest was found

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