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ASSESSMENT OF URIC ACID, UREA & CREATININE IN PATHOGENESIS OF ORAL SUBMUCOUS FIBROSIS

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ABSTRACT

Back ground:

Oral sub-mucous fibrosis (OSMF) is a constant, high danger precancerous condition and portrayed by epithelial incendiary response. Next to no data is accessible about biochemical abnormalities & alternations in other metabolic parameters.

Methods:

So, in this study, our aim is to investigate the uric acid, urea & also creatinine levels in oral malignancy patients. The total of 40 patient of clinically analyzed OSMF was considered for the study. The data that were achieved was analyzed by SPSS19, the "Statistical Package of Social Sciences", and version 19.0.

Results:

The significance was determined statistically at P value < 0.05. We got no significant alteration was found in serum uric acid, urea & creatinine levels in OSMF patients in comparison to control.

Conclusion:

Advance research analysis effort is needed in this precise area to discover the specific job which these boundaries play in the pathogenesis of Oral sub-mucous fibrosis.

Keywords: Cancer, Oral sub-mucous fibrosis, Uric Acid, Urea, Creatinine

INTRODUCTION

The Oral sub-mucous fibrosis (OSMF) is known as a common, premalignant condition and portrayed by epithelial fiery response. The fundamental driver of the sickness increment is the consumption of gutkha, panmasala, khaini (made of areca nut). As the sickness advances, the jaws become rigid to the point that the individual is insufficient to open the mouth. The function of areca nut in the pathogensis of the disease OSMF has been concentrated exhaustively over most recent twenty years. It is a evident that fibrosis & hyalinization of the sub-epithelial tissues represent a large portion of the clinical provisions experienced in this condition. In addition, generous measure of work seems to have been more focused on changes in the ECM (i.e. extracellular matrix). It is consistent to guess that the expanded collagen combination or decreased collagen synthesis as conceivable system in the improvement of the illness **[1]**.

It is a disease of obscure reason that happens essentially in India **[2, 3]**. The utilization of smokeless tobacco related with oral malignancy was called attention to as ahead of schedule as 1908. Resulting Indian investigations on tobacco have shown its relationship with significant illness elements, both in smoking just as in smokeless structure. The propensity for smokeless tobacco (likewise alluded as tobacco biting) is additionally extremely normal. Relationship of smokeless tobacco has been seen with tumors of oral pit, pharynx, larynex and throat, and precancerous sores of oral depression **[4, 5]**. The pathogenesis of the illness is as yet not plainly saw however it is generally viewed as an unusual injury mending measure and is frequently contrasted and fibrosis of different organs **[6]**. Fibrosis occurs in other organ such as liver that is related with various biochemical modifications which lead to structure & metabolic anomalies. The abnormal lipid digestion anomalies as well as consequent impaired or diminished cholesterol happens in the fibrosis & cirrhosis of liver **[7]**. On contrasting OSMF and the liver fibrosis, tends to be hypothesized that biochemical-parameters may likewise assume a part in pathogenesis of the sickness. Be that as it may, apparently, no examination has analyzed the job of urea, uric acid &

creatinine in the etiology of oral malignancy. Next to no data is accessible about the biochemical anomalies and changes in metabolic boundaries. Accordingly, in the current investigation is aimed to analyze the Urea, Uric Acid & Creatinine levels in patients having oral cancer and also compare them with those of normal people with the purpose of examine the possible role of urea, uric acid and creatinine parameters that found associated with the pathogenesis of the disease OSMF and to access their active role in aetiology and progression of OSMF.

MATERIAL AND METHODS

The present study was carried out in the IMS and Sum Hospital, Bhubaneswar, Odisha for a period of one and half year from 2019 July to December 2020. After proper evaluation of the records, a total of 40 cases of clinically diagnosed OSMF were considered for the study. Clinical detail included name, age, sexual orientation and with no set of experiences of propensity for biting areca nut and tobacco just as any significant sickness in ongoing past was incorporated as one controls. Uric acid that there in serum was managed by the technique for uric analysis, creatinine present in serum was dictated by creatinine test pack and urea present serum was controlled by urea test unit and all information levels estimated by colorimeter.

Patients with propensity for biting areca nut/one of its business arrangements, with presence of consuming sensation, powerlessness to burn-through flavors, firmness mucosa of buccal, vesicle development, ulceration & whitening of oral mucosa were memorized for the OSMF bunch. The Patients with having any fundamental infection/ any significant disease & propensity for biting just tobacco were excluded.

RESULTS

The present study have been comprised of 40 patients with early symptoms of Oral Submucous fibrosis OSMF eg- burning sensation, dry mouth, blanching oral mucosa and ulceration assigned as Group I whereas Group II was with Advanced OSMF with following symptoms trouble in mouth opening (lockjaw), sinking of the cheeks messed up with regards to age, hardened and little depapillated tongue, whitened floor of mouth, fibrotic gingival tissues, solid delicate sense of taste with decreased mobility and contracted bud-like uvulav and whitened as well as atrophic tonsils. The values of urea, uric acid and serum creatinine of group I & II were compared with that of normal control group.

Half of the patients (50%) were over 40 years followed by 30-40 (30%) and <30 (20%) years. The mean age of patients was a 38.65±10.24 year ranging from 22 to 60 years. Majority of patients were males (70%) **(Table 1)**.

In Comparing the values of urea study groups with the control group, the serum urea ranges of study group-I (15.20+2.7) is slightly lower than group-II (15.45+2.9) and control group ranged equal with group I (15.25+3.2). This study confirmed that serum uric acid level was non-significant & not much difference observed in advanced OSMF group with normal control group. Whereas decreased levels observed in early stages of OSMF in compared with control group. The mean serum uric acid levels in bunch I is 6.25+2.0 and 8.00+1.4 for bunch II while 7.99+3.0 in the benchmark group. There was a huge diminished degrees of uric acid seen in beginning phases of OSMF bunch I oral malignant growth patients contrasted with that of the benchmark group. It was likewise seen that mean serum uric acid levels in bunch II practically equivalent with typical qualities. Past investigations showing connection between serum uric acid and disease frequency have been somewhat conflicting. Where as in serum creatinine the mean upsides of Group II was fundamentally expanded in contrasted with bunch I just as expected benchmark group **(Table 2)**.

Table 1: Age and sex distribution of study patients

	No. (n=40)	Percentage %
Age in years		
<30	**8**	**20**
30-40	**24**	**30**
>40	**20**	**50**
Mean±SD (Range)	**38.65±10.24 (22-60)**	
Sex		
Male	**28**	**70.0**
Female	**12**	**30.0**

Table 2: Estimation of urea, uric acid and creatinine in study groups

Parameter	Group 1 (Early OSMF)	Group 1 (Advance OSMF)	Healthy control
Urea	**15.20+2.7 (NS)**	**15.45+2.9(NS)**	**15.25 + 3.2**
Uric acid	**6.25+2.0 (NS)**	**8.00+1.4 (NS)**	**7.99 + 3.0**
Creatinine	**0.9+/-0.32**	**1.0+/-0.41 *****	**0.8= /-0.36**

The values of the above table are found expressed as the mean + SD for number 20 patients in every group. Group I as well as Group II were contrasted and typical benchmark groups. NS: Non-Significant. **p<0.001

DISCUSSIONS

The Oral sub-mucous fibrosis (OSMF) is characterize as a persistent, guileful oral mucosal state of the mouth depression as portrayed by juxta epithelial provocative response after that constant modify in the

fibro-versatility of the lamina propria and is related with epithelial decay. This results in alternation of consuming sensation in the oral cavity causing lockjaw along these lines debilitating the capacity to talk. The more matter of worry in the course in recent years is the dangerous change rate, which has been accounted for to be around 7.6% over a 17-year period **[6]**. Oral disease originates from a precancerous injury is a significant normal marvel nowadays. The hurtful propensities, for example, utilization of tobacco admission both in smoking and smokeless structures, container masala and Gutkha biting, and items which contain areca nut are the primary causative specialist for premalignant messes. In the writing from Indian subcontinent review, utilization of areca nut is the most etiologic basic agent **[8]**. Hence, we assessed the serum levels of urea, uric acid and creatinine in oral submcous fibrosis patients and typical control. This examination showed that serum uric acid, urea and creatinine were changed in OSMF patients contrasted and solid volunteers yet were measurably non-huge. This shows that adjustment of biochemical qualities do happen in the premalignant condition of the body yet the qualities are not genuinely huge. Joseph *et al*., **[9]** likewise discovered non-huge change in the "creatinine phosphokinase" levels in oral sub mucous fibrosis patients. In fibrosis cases, because of decreased supplement stream, there is decrease in blood supply in the locale to the area similarly as in foundational sclerosis as exhibited by Partovi *et al*., **[10, 11]**.

The indicative & prognostics worth of "creatine phosphokinase" as biomarker in other sickness are all around recorded. The "Creatine phosphokinase" is a protein that delivers because of muscle harm in various foundational infections. Subsequently this is utilized as biomarker to discover the degree of muscle harm or the advancement of an illness. The significance of biomarkers in muscle harm is accounted for in an investigation done by Brancaccio *et al*., **[12]** The creator prescribes to utilize these biomarkers for muscle pressure, and harm. The specific instrument for protein discharge isn't clear, yet some kind of muscle tissue harm can change the serum worth of "creatine phosphokinase" which can be validated by the above investigations. The meaning of possibly harmful problems such as oral leukoplakia, oral submucous fibrosis demonstrated measurable significance in an investigation done by researchers Spoorthy *et al*., **[13]**.

Our examination had complete 40 patients in each gathering of patients with no other

fundamental infection, which had propensities for biting of areca nuts. We didn't get a measurable importance between urea, uric acid & creatinine identified with oral submucous fibrosis against as recorded in other writing. Anyway we were unable to follow a writing expressing such varieties in urea uric acid and creatinine levels in oral submucous fibrosis. This can be because of the distinction in pathophysiology of oral submucous fibrosis and different infections like myocardial localized necrosis & colon malignancy, where in the "creatine phosphokinase" showed a huge correlation **[14]**. Be that as it may, our examination shows a gentle contrast in degrees of urea, uric acid and creatinine values between typical subjects and oral submucous fibrosis patients. In oral submucous fibrosis, there is juxtaepithelial fiery response preceded by actuation of collagen creation pathway prompting testimony of type 1 collagen filaments. While in fibrosis, there is decrease in blood supply in the area bringing about diminished supplement stream, diminished insusceptibility, to the area similarly as in foundational sclerosis. Throughout some undefined time frame, there be able to be established fibrosis as well as loss of movement of muscle.

CONCLUSION

In this study, deciding serum urea, uric acid as well as creatinine as a portion of biochemical evaluation, which may used as proactive mediation for high risk groups. We found no correlation assessment of urea and creatinine in uric acid, pathogenesis of oral sub-mucous fibrosis. Further exploration works is needed in this precise field to discover the specific job in which these boundaries play important role in the pathogenesis of oral sub-mucous fibrosis

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