Awareness about management strategies of cancrum oris among general dental practitioners

Type of Manuscript – Research article
Running title – Awarness about management strategies of cancrum oris

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Abstract:

Background:
Noma is an rapid spreading devasting disease but opportunistic that often results in severe facial disfigurements and mortality if left untreated. Cancrum oris (noma) is caused by the spirochete Borrelia vincenti in association with anaerobic bacteria, commonly a member of the fusobacteria.It usually occurs at earlier age groups, and with the etiology being malnutrition, infection like measles, TB, Vitamin deficiency, improper oral hygiene. Since Noma spreads rapidly, early detection and treatment is important to prevent the developing disease.

Materials and methods:
A survey was conducted among 50 general dental practitioners, a self designed questionnaire was prepared comprising of about 13 questions, which was regarding the diagnosis and management of the condition. The results from the survey was tabulated and analysed.

Results:
All of them were aware about cancrum oris, 50% said the condition can be diagnosed by routine examination and patient history. 30% said that gingivitis is the initial stage in development of cancrum oris. Most of them (45%) were aware that antibiotics should be administered as the first line of treatment for cancrum oris. All of them had an average level of knowledge about diagnosing and management of cancrum oris.

Conclusion:
Proper and through routine examination, further knowledge about management and reconstruction procedures in treatment of NOMA should be well known for the GDP's in future which can only be achieved by them by improving their knowledge about the condition. Workshops and education programs should be conducted for the same to improve the knowledge and awarness about the devasting disease NOMA for a Better future.

***Keywords*: Examination, Noma, Malnutrition, Knowledge, Antibiotics**

Introduction:
Noma is a rapidly spreading mutilating gangrenous stomatitis caused by the spirochete Borrelia vincenti in association with anaerobic bacteria, commonly a member of the fusobacteria. The disease occurs in deprived and undernourished individuals with poor hygiene (1,2). A combination of many factors leads to its development with poverty being most important. Other important factors are malnutrition (both past and present), poor oral hygiene as well as measles and malaria(3,4). Infection occurs mostly in

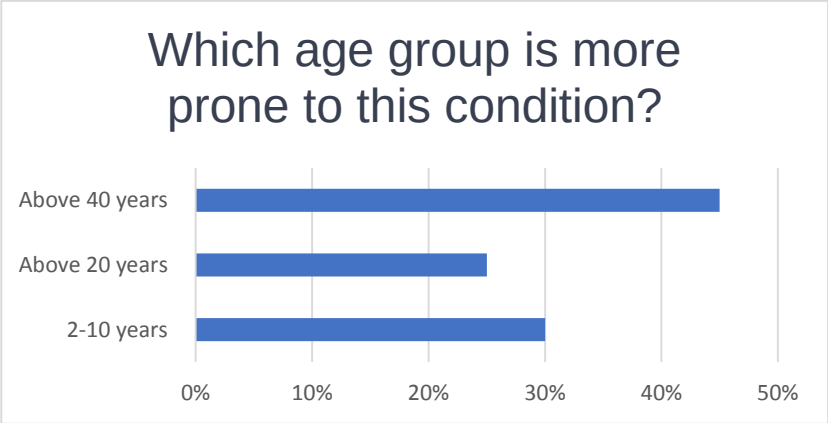
children, although it has been described in neonates, adults, and the chronically ill patients. NOMA though considered infectious in origin, is generally believed to be opportunistic rather than communicable(5). Most Frequently identified flora have included Tremponema vicentii, other spirochetes or fusiform bacteria, Staphyloccus aureus, α-hemolytic Streptococcus, and Pseudomonas (6). NOMA is said to progress more rapid and the disease can be said to consist of four different stages, with the first stage being gingivitis were there is bleeding gums, In the second stage, there is swelling of the cheek, chin or lips, accompanied by fever. Within a few days a gangrenous plaque with a dark greyish and then black colour appears, which is considered to be the third stage. In the fourth stage being more severe were the gangrenous tissues have fallen off, leaving a hole in the affected part of the face (7,8). The clinical presentation of noma includes malodorous breath, excessive salivation, severe dehydration, anemia and symptoms of both acute and chronic illnesses such as kwashiorkor. Fever, lymphadenopathy, and leukocytosis may reflect the acute infectious process (9) . Management of the disease mostly depends on the severity of the disease were the initial stages can be treated using antibiotics , nutritional supplementation as well as improvements in oral hygiene, while later stages require professional care and surgery (10). Although the risk of noma is small, measures can and should be taken to prevent this disease from developing. Early detection by General dental practitioners revents the disease from evolving as well as its complications. Consequently, mouth examinations and knowledge and awareness about the early stages of noma should be known which can help to potentially lower the burden of the disease (11). The aim of this study, therefore, was to investigate general dental practitioners about knowledge and management of noma.

Materials and methods :

The survey was conducted among 50 general dental practitioners. The questionnaire consisted of about 13 questions were there was questions regarding diagnosing, management of cancrum oris . The first part of questionnaire were the participants needed to answer questions like what they would ask the patient, what the probable diagnosis is, what treatment they would give and what advice they would give to the patient. The second part of the questionnaire addressed knowledge on noma directly. This part included questions on knowing noma, its risk factors, consequences of untreated or poorly managed noma as well as its treatment and prevention. The participants were informed about the survey and consent was obtained before proceeding with the survey. The results were analyzed.

Results:

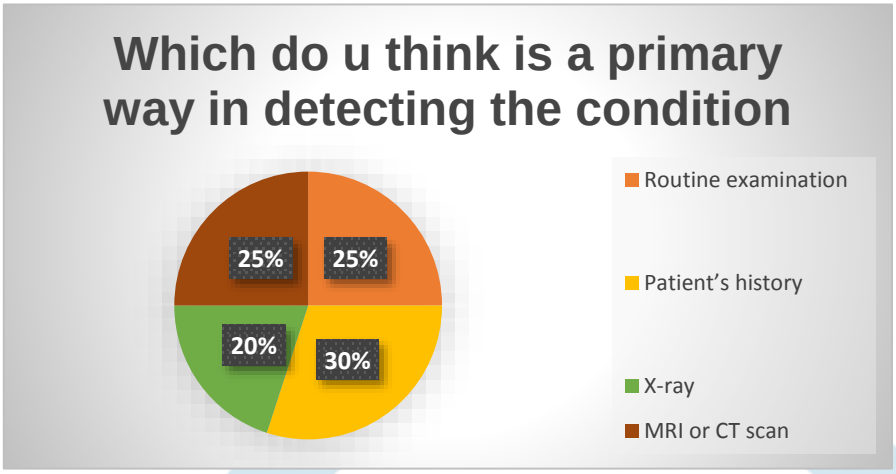
Figure – 1 – Common age group affected by cancrum oris



30% answered it affects age group of (2-10 years), 25% answered it affects age group above 20 years, 45% answered it affects people above 40 years of age.

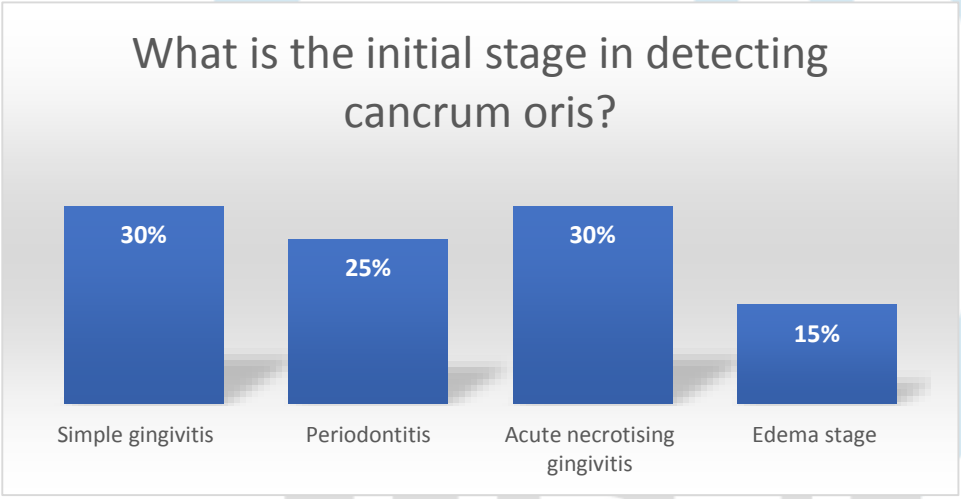
Figure -2 Primary way in detecting the condition

25% answered that the condition can be diagnosed by routine examination, 20% answered it can be diagnosed using X-Ray, 30%



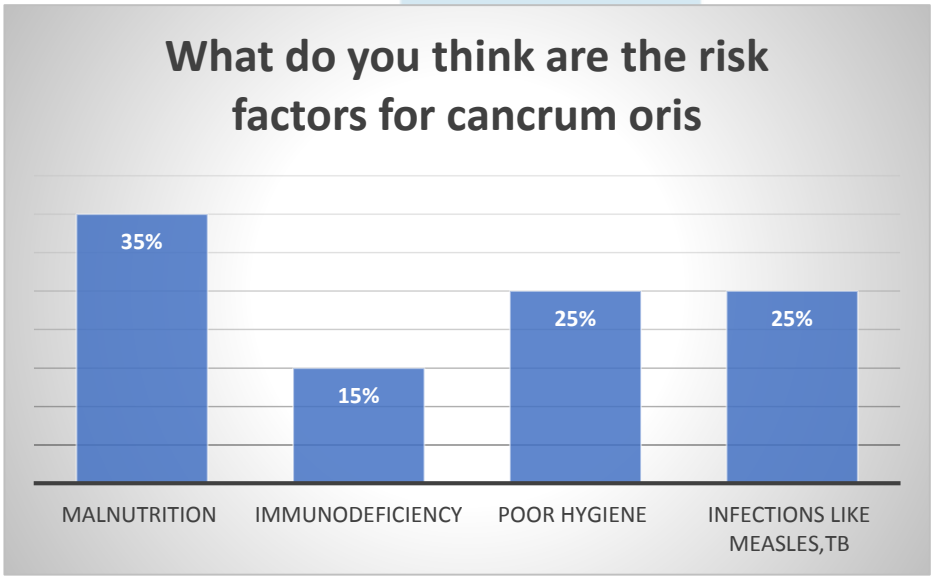
answered it can be found out by the history of the patient, 25% answered it can be diagnosed using MRI or CT scan.

Figure -3: Initial stage of cancrum oris



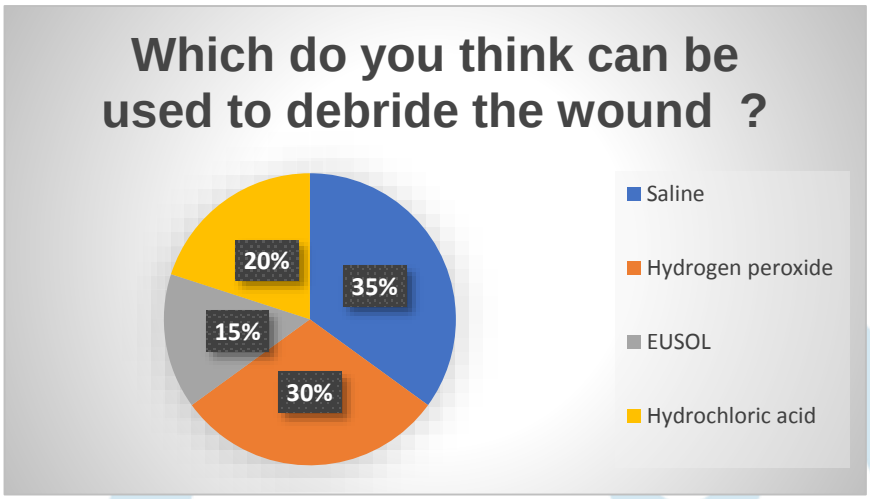
On enquiring about the initial stage of cancrum oris, 30% answered as simple gingivitis, 25% answered periodontitis was the initial stage, 30% answered that Acute necrotizing gingivitis was the initial stage, 15% stated that edema stage as the initial stage.

Figure -4 Risk factors of cancrum oris



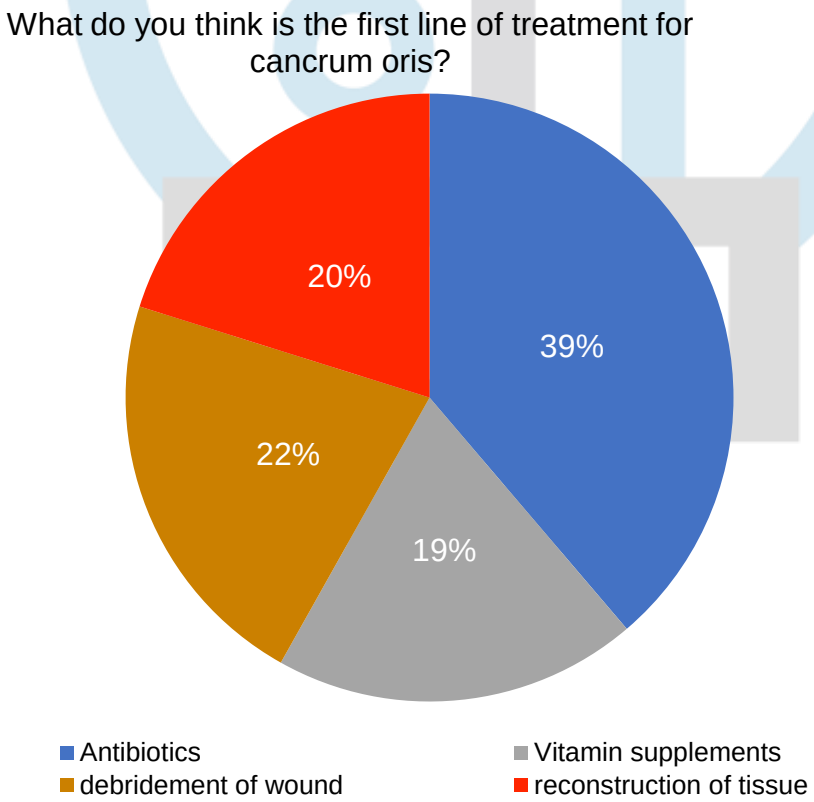
On asking about the risk factors of cancrum oris, 35% answered that malnutrition could be risk factor, 15% said that its due to immunodeficiency, 25% said that poor oral hygiene as a risk factor, 25% said that infections like measles and TB as a positive risk factor for cancrum oris.

Figure -5. Materials used for debridement of wound



35% said that saline can be used to debride the wound, 20% said hydrochloric acid can be used, 15% said EUSOL can be used, 30% said that hydrogen peroxide can be used.

Figure – 6 First line of treatment for cancrum oris



39% said that antibiotics as the first line of treatment, 22% said as wound debridement, 19% said that vitamin supplements can be administered, 20% reconstruction of tissue should be done first.

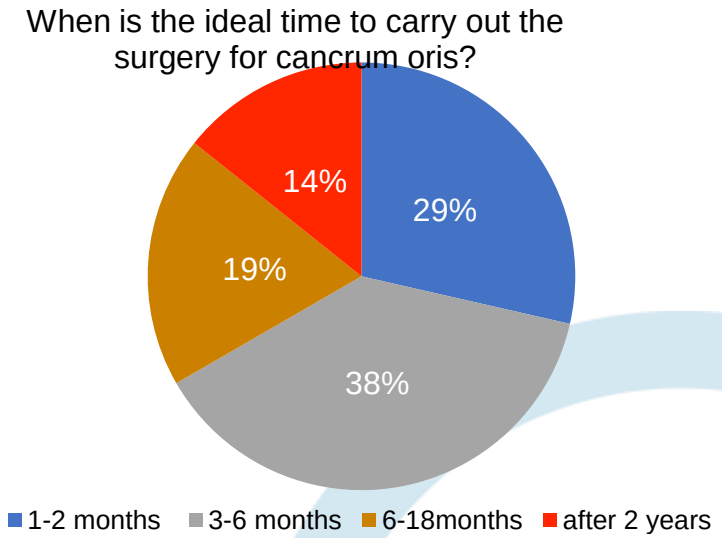


Figure-7 Ideal time to carry out surgery

38% said that surgery can be done after a period of 3-6 months, 29% said that it can be done after 1-2 months, 19% said that it should be done after 6-18 months, while 14% of them said it can be done after 2 years.

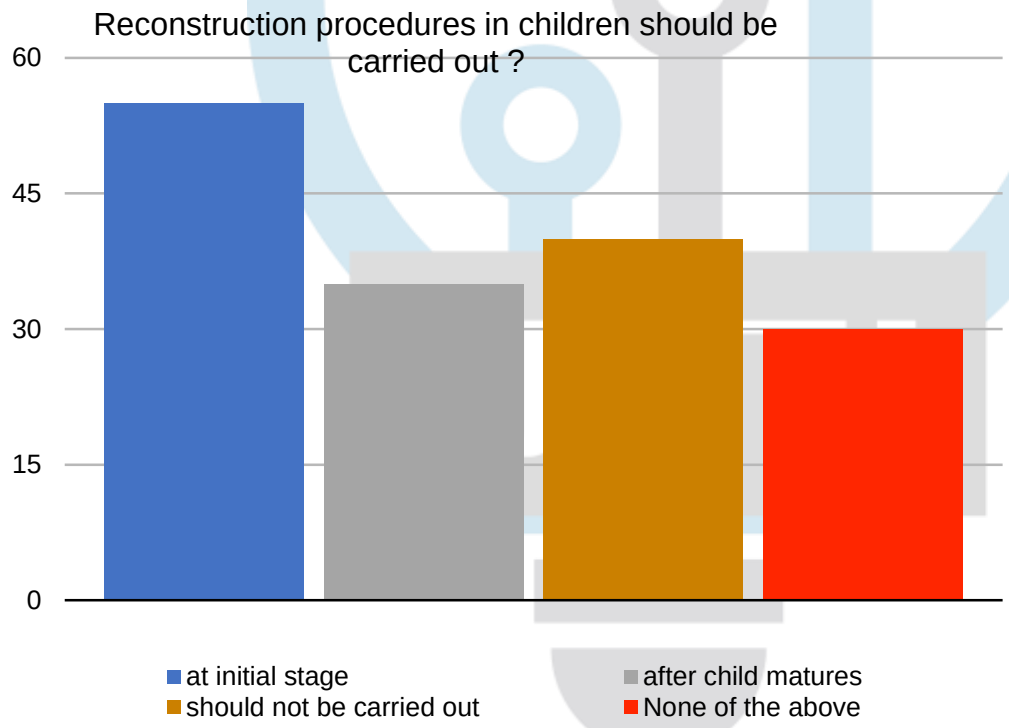


Figure-8 Reconstruction procedures in children

Almost 50% of them said that it should be carried at the initial stage of the condition, 32% said it should done after maturity of the child, 35% said it should not be carried at all, while 30% stating None of the above.

Discussion:

The results of this study show that most of the general dental practitioners (50%) said that the condition can be diagnosed by routine mouth examination and examination on children with malnutrition, measles and HIV, which are the most important predisposing factors for noma. The same was quoted by Mathilda et.al were 86% of health care workers perform routine examination on children to diagnose the condition (12).

This study shows that majority of GDP's conduct mouth examinations, but also that 40% recognize simple gingivitis, as an early stage of noma. The management of this early stage of noma is also treatable. Were most respondents 50% correctly identified antibiotics as first line of treatment of NOMA. Malnutrition leads to dysregulated immunity with the release of cytokines. Vitamin A and zinc deficiencies are characterized by diminished cell-mediated immunity which causes early breakdown in the integrity of epithelial tissue and pathologic alterations of the oral mucosa. These conditions predispose to B. vincenti infection in association with anaerobic bacteria(13). With this malnutrition being the major cause for the infection, in our study 50% of the GDP's said that Malnutrition as a major risk factor for cancrum oris (Noma). All participants had a average knowledge or suboptimal level about the management strategies and in diagnosing cancrum oris (Noma). With 70% of them knowing about the condition but focusing on management and diagnosis GDP's had a average knowledge about them. With the development of noma being very rapid, diagnosis at early stage is still possible to prevent noma and its sequelae from developing further by giving effective antibiotics together with local disinfection and nutritional rehabilitation (14).

With the data revealing lack of knowledge among GDP's regarding noma, many of them detect the gingivitis in early stage and prescribe antibiotics whichever is needed for the condition. From our study 57% said that Amoxicillin can be used as a initial antibiotic to treat cancrum oris.

With NOMA being a devastating disease, knowledge and practices of detection in early stages of noma, such as gingivitis, these practices lead to an earlier detection and more rapid provision of care, which aids in the prevention of Noma (15).

Even though Noma being an Rare entity in our Indian population, knowledge about the condition, stages of disease progression and idea about the treatment methods should be known to treat the condition. Detection at the early stage can prevent the disease at the initial stage.

Conclusion:

From our study we conclude that there was only average knowledge (55%) among GDP's about NOMA. It clearly indicates that further practices about detection at the early stages of disease. Proper and through routine examination, further knowledge about management and reconstruction procedures in treatment of NOMA should be well known for the GDP's in future which can only be achieved by them by improving their knowledge about the condition. Workshops and education programs should be conducted for the same to improve the knowledge and awarness about the devasting disease NOMA for a Better future.

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