Original Article

Myth or Reality - Superstition in Orthodontic Treatment in Rural area of Katihar-Bihar

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ABSTRACT

Background: Orthodontic practice become most challenging when you are practicing in the rural area of the Country. The most common challenge comes when you plan for the extraction and the patient denied due to fear of extraction. The aim of the study is to analyse the causative factor of fear. **Methods**: The simple random sampling technique were used for the study and a sample size of 110 patient was selected from February 2018 to March 2019, attending the Outpatient Department of Dentistry, Katihar Medical College, Al-Karim University, Katihar, Bihar, India. **Results**: The study was based on the five questionnaires before the start of treatment. **Conclusion**: Lack of education, Misconception, Pain during extraction and myth were some of the causative factor respectively the fear of extraction in orthodontic treatment.

Keywords: Fear of extraction, Class II Malocclusion.

INTRODUCTION

Forwardly placed upper teeth is the cases where extraction of first premolar needed. The patient knows what an Orthodontist is going to do with their teeth. These are the mostly cases of class II malocclusion. The active treatment in orthodontic increases with age.[1] Active treatment need extraction of premolar and retraction of anterior mass teeth with maximum anchorage.[2] There might be other option also such as distalization, arch expansion, stripping of teeth to gain space and retract the teeth. But soft tissue profile changes are much possible in premolar extraction and retraction which also resolves the problem of crowding in the dental arch.[3,4] Prop jordanova N et al,[5] in his study define "Dental fear usually indicates an unpleasant emotional reaction to specific threatening stimuli occurring in situations associated with dental treatment. He also finds that people from low socioeconomic status groups reported a higher level of dental fear than those individuals from high socioeconomic groups."

The purpose of this study is to know the reason of fear of extraction in Orthodontic treatment in rural and backward area Katihar, Bihar, India.

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MATERIALS AND METHODS

The sample was collected from the Outpatient department of Dentistry, Katihar Medical College, Al-karim University, Katihar, Bihar, India from February 2018 to March 2019. 110 patients were selected both male and female. The treatment plan for correction of malocclusion was planned and extraction of first premolar was also there in the plan. When the discussion is done with the patient and guardian, they just refuse to do the treatment after hearing of extraction in Orthodontic treatment. We have provided a five-question mode paper Infront of him and asked to just say yes or no in the paper regarding the fear of extraction in Orthodontic. [Table 1]

Table 1: Five-question model paper

S. No	Questionaries	Yes	No
A	Are you being afraid of extraction	58%	42%
B	Do Upper arch extraction effects the eye sight	68%	32%
C	Due to extraction of tooth, you opt to left Orthodontic treatment	55%	45%
D	Do extraction affect the health Fitness	44%	56%
E	Do space of tooth remain unclosed after treatment	62%	38%

RESULTS

The result shows 58% are being afraid of orthodontic extraction treatment plan. 68% of the cases agreed that upper arch extraction causes

eyesight effect and 32% denies it. It shows the illiteracy and unawareness of Orthodontic treatment in rural and backward areas. 55% agreed that due to extraction he/she leaved the treatment. But 44% of cases denied that extraction affects the heath of a person. A major percentage 62% agreed that space may remain open after the completion of orthodontic treatment [Figure 1]. This is due to lack of Specialization practice at rural and backward area. At the time of writing of this article there is only one orthodontist at Katihar, Bihar, India which might be the factor of illiteracy among the patient regarding orthodontics treatment.
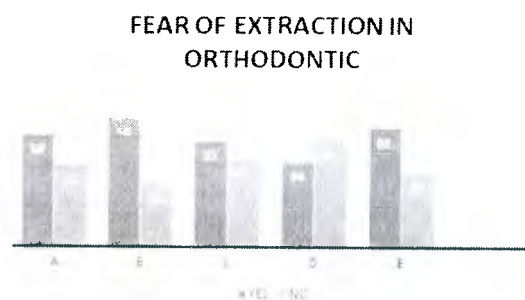
FEAR OF EXTRACTION IN ORTHODONTIC

Figure 1: Level of Percentage of 5 questionnaire among people of Katihar

DISCUSSION

The purpose of the study was to diagnose the fear of extraction in orthodontic treatment. Most of the patient are not well known of the fact that "it need extraction sometime to resolve the crowding problem". Fear of orthodontic treatment because of extraction depict the low level of un-education or illiteracy in rural and backward area. It also proved that with increase of education level fear of treatment decreases which support the study done by Al-Omari6 and other author.[7-11]
In our study the most refusal of orthodontic treatment 68% is due to loss of eyesight as upper both first premolar is near to eye area. The second most common problem of refusal 62% is due to space remain open after an orthodontist extract the teeth. This show the illiteracy of orthodontic programme in rural and backward area. Education and motivation to the subject regarding orthodontic treatment improves the condition in the rural area. Many studies are their which corelate the dental treatment and fear of dental treatment among subject but very few studies are there to see the fear of extraction in orthodontic treatment before start of a treatment by asking some of the questionaries' to the subject.[12-14] This type of study shows the basic fact and real knowledge prevalence among the mind of the person residing in the rural and backward area.
There is limitation of this study not to corelate among male and female because it might create bias among subject. Patient never be defined by

their gender. More studies should be done in these areas for the mental health status and thinking of myth among the people of rural and backward area.

CONCLUSION

Fear of extraction, myth about incomplete closure of spaces after Orthodontic treatment and loss of vision after extraction to Orthodontic treatment were found to be a prevalent reason for refusal of Orthodontic treatment in rural and backward area of Katihar, Bihar, India.

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Original Article

Prevalence of Malocclusion in Rural and Backward Area (Seemanchal) in Bihar-India.

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ABSTRACT

Background: Malocclusion is the biggest challenge in the world and its existence varies. Diagnosis and treatment Plan predict the occlusal Problem and its occurrence. Interceptive and preventive treatment needs more manpower for prediction of malocclusion. In Katihar (Seemanchal) area there is no any malocclusion related studies. The aim of this study is to evaluate the existence of different types of dental malocclusion in this rural and backward area. Methods: The study was done in 2109 patient who have visited the dental department of dentistry, of Katihar medical college in between September 2015 to February 2019. The different parameter was recorded and analysed. Chi Square test is done for the significance of gender and it the difference is p < 0.05. Results: In our study it is found that angle class I malocclusion is 59.5% with Class II malocclusion is 36.8% and 8.2% of class III malocclusion. The most problem in this area is crowding 81.1% followed by increased overjet, deep bite, crowding and spacing. Except deep bite there is no gender significance difference exist. Conclusion: The result in this study shows the prevalence of malocclusion and decreased of awareness which set a base line for awareness programme and interceptive and preventive orthodontic service and future study in Katihar (SEEMANCHAL) population.

Keywords: Malocclusion, Angle Classification.

INTRODUCTION

Houston et al in 1992 in his study found that malocclusion is the deviation from ideal occlusion that may result aesthetically unsatisfactory. Due to this condition there is imbalance in the size of teeth & its position with relative structure like cheeks, lips and tongue.[1] Malocclusion is a common condition in the modern civilization due to adoption of soft food and lack of stimulus of the proper jaw growth, and proximal attrition of teeth, which otherwise helps to accommodation of teeth in dental arches in aligned manner.

Beautiful Smile comes from balanced & well-organized teeth in the jaw which gives positive attitude to a person.[2] Majority of people or community have balanced teeth which gives them pleasing smile while protruding & crowded teeth reflects bad smile and negative status.[3,4] India is a diverse and vast subcontinental show large variation in procedure of malocclusion in different region of country variation in ethnicity nutritional status religious belief, diet may be attributed to variation in prevalence of malocclusion. The prevalence of malocclusion in India is found to be 20 to 43 %.[5-8] In India, very few studies have been reported on prevalence of malocclusion. The World Health Organisation (1987) had included malocclusion under the heading of Handicapping Dentofacial anomalies defined as an anomaly which causes designment or which impedes function and requiring treatment. "if the disfigurement or functional defect was likely to be an obstacle to patient physical or emotional wellbeing."[9]

Orthodontist is a specialized branch which is able to diagnose the prevalence of malocclusion. Developed countries have their specialist for diagnosis of prevalence of malocclusion in a given population.[10-16] India is a developing country which lack specialist in a given population regarding the prevalence of malocclusion.[17] It is the indeed to collect more and more information from patient regarding malocclusion in rural and backward area in India. There are many studies in the world which is published regarding the malocclusion prevalence in different population.

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The results say's that prevalence of malocclusion ranges from 39 to 98 percent which is shown in [Table 1].[18]

India is a large country it's in orbital being multi-racial and multi ethnic.[19] Indian population has been largely divided into seven ethnic groups based on anthropometric measurement and skin colours. These are Indo Aryans, Sytho Dravidian, Mongolo Dravidian, Dravidians, Mongoloids, Dravidian, Arya Dravidian and Turko Indians. In India only few studies have been conducted19 to check malocclusion prevalence and orthodontic treatment needs. The studies which have been added to the first study carried in 1942 until date. The studies are isolated to Nagpur, Bombay, (Maharashtra),[20] Bangalore (Karnataka),[21] Madras (Tamil Nadu),[22] Trivandrum (Kerala),[23] Patiala (Punjab).[24]

The patient occlusal relationship was assessed at a centric occlusal position, which was carried out by asking the patient to open his mouth widely and close it by swallowing the saliva. After achieving the maximum occlusal contact, it is classified as Normal Occlusion and Malocclusion.

Therefore, the purpose of the present study was to assess the acuteness or severity of malocclusion, with respect to age and sex in the age-group of 13 and 16 years in rural and backward areas of Katihar city (Seemanchal) of Bihar state in India.

Aim and objective:
1. To evaluate the malocclusion Prevalence in 13 to 16 years age children visiting our Institution.
2. To know the ratio of various types of malocclusion.
3. To check the different malocclusion variation like crossbite, open bite, protrusion of teeth, deep bite, and rotation of teeth.

MATERIALS AND METHODS

A sample of consecutive persons was identified through the dental screening program was conducted in the Dental Department of Katihar medical college, Katihar district. A total number of 2245 were examined among which 2109 (male - 1121 and female - 988) satisfied in the inclusion criteria. The Patient is told about the study and Informed consent was obtained from the parent/guardian after explaining about the involvement of their children in the study.

Inclusion Criteria:
1. Age group in between 13 to 16 years.
2. All first permanent molars should be present.

Exclusion Criteria:
1. Previous history or ongoing Orthodontic Treatment.
2. Un co-operative child
3. Medically Compromised Child.

The following parameters were recorded. The relationships of the maxillary and mandibular first permanent molars in maximum intercuspation by Angle's classification25; crowding; spacing; increased overjet (more than 3 mm), increased overbite (more than 3 mm), open bite; deck bliss pattern of incisors; and mandibular prognathism as evaluated clinically. The data were obtained through direct clinical examination by an orthodontist. Various classes of malocclusion according to Angle's classification & other parameters studied are as described below.[26]

Angle's Class I relation: The mesio-buccal cusp of the maxillary permanent first molar articulates in the mesio-buccal groove of the mandibular permanent first molar.

• Angle's Class II relation: The mesio-buccal cusp of maxillary permanent first molar articulates mesial to mesio-buccal groove of mandibular first molars.

Angle's Class II subdivision 1: A molar class II relationship in which maxillary incisors are proclined with increased overjet.

Angle's Class II subdivision 2: A molar class II relationship in which maxillary central incisors are retroclined, and maxillary lateral incisors have tipped labially and mesially, covering the distal of central incisors. The overjet is reduced, and there is deep bite of partial / complete / traumatic / more than 100% nature.

• Angle's Class III relation: The mesiobuccal cusp of maxillary first permanent molar occludes distal to mesiobuccal groove of mandibular first molars.
• Class IV relation: When there is Angle's molar Class II relation on one side & Class III relation on other side of the dental arches in occlusion.
• Deck bliss: It is the upper incisors arrangement in div 2 pattern while molar relation is Angle's class I.
• Overbite medically refers to the extent of vertical (superior-inferior) overlap of the maxillary central incisors over the mandibular central incisors. It was recorded as increased when the maxillary central incisors covered the mandibular central incisors by more than 3 mm.
• Overjet is the extent of horizontal (anterior-posterior) overlap of the maxillary central incisors over the mandibular central incisors. It was measured with a graduated scale and evaluated to the nearest 0.5mm. An overjet greater than 3 mm was increased.Anterior open bite was calculated when tip of the maxillary incisors did not overlap the incisal edges of the mandibular incisors.
• Crowding was defined as overlapping of erupted teeth due to lack of space or insufficient for teeth to erupt in the dental arch.
• Spacing was recorded to be present when there was no approximal contact between 2 teeth in a dental arch. However, no quantitative or qualitative measurement for crowding & spacing was done in any arches. It was just recorded as either present or absent in either of the dental arch. No segregation was done for upper or lower arch.

RESULTS

The results were given in a expressive fashion using absolute numbers & the percentage of different types of conditions for both sexes separately. Pooled data was also evaluated for finding the distribution of various conditions. Statistical significance for any sexual dimorphism between different parameters was assessed with the chi-square test and p<0.05 was regarded as significant. Results have been presented in [Tables 2 & 3]; and [Figure 1 & 2]. There was significant difference between occurrence of the 3 classes of Angle's malocclusions [Table 2], chi square test, at P <0.01). There were no significant gender differences among all the parameters studies except deep bite ([Table 3], chi square test, at P <0.05) which was found to be more in males as compared to female.
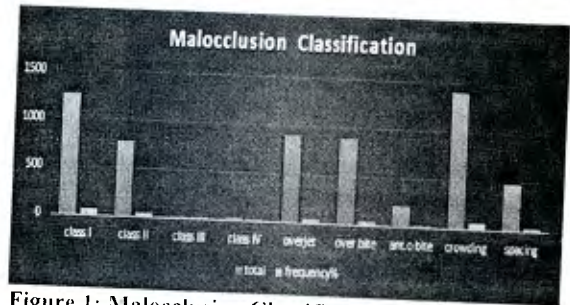

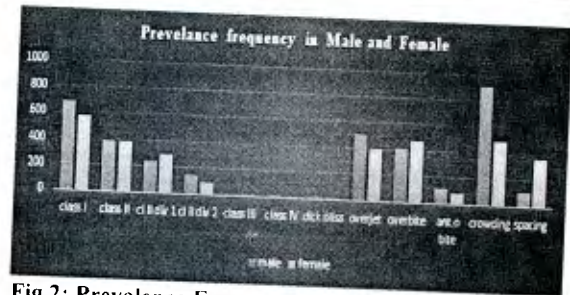Figure 1: Malocclusion Classification

Fig 2: Prevalence Frequency in male and Female

Table 1: Percentage distribution of malocclusions in children and adolescents in different ethnic groups.

Author	Population	Subjects n	Age	Registration	Percentage
Thilander and Myberg (1973)	swedish	5459	13	Bjork et al.(1964)	73.8
Al-Emran et al.(1990)	Saudi Arabia	500	14	Björk et al. (1964)	Up to 51
Kerosuo et al. (1991)	Finish	458	12-18	Angle classification	88
Kerosuo et al (1991)	Tazanian	642	11-18	Angle classification	45
Lew et al. (1991)	Chinese	1050	12-14	Foster and day (1974)	92.9
Ng'ang'a et al. (1996)	Kenyan	919	13-15	Bjork et al. (1964)	72
Silva and Kang (2001)	American-Latino	507	12-18	Angle classification	93
Thilander et al. (2001)	Colombian	1441	13-17	Bjork et al.(1964)	88
Mugonzibwa et al.(2004)	Tanzanian	869	3-16	Bjork et al.(1964)	Up to 51
Onyeaso (2004)	Nigerian	636	12-17	Angle Classification	76
Abu Alhaijia et al. (2005)	Jordanian	1003	13-15	Bjork et al (1964)	92
Behbehani et al(2005)	Kuwaiti	1299	13-14	Angle classification	86
Ciuffolo et al.(2005)	Italian	810	11-14	Criteria by US National Health and Nutrition Examination Survey (Brunelle et al., 1996)	93
Gabris et al.(2006)	Hungarian	483	16-18	Dental Aesthetic Index (Cons et al., 1986)	70.4
Rwakatema et al. (2006)	Tanzanian	289	12-15	Bjork et al (1964)	97.6
Dhar et al (2007)	Indian	812	11-14	World Health Organization (1999)	38.9

Table 2: (Malocclusion Classification)

S.No	Parameter	Total N (male+ female = 2109)	Frequency %
1	Class I	1255	59.5**
2	Class II	778	36.8**
3	Class III	18	8.2**
4	Class IV	29	1.3
4	Overjet	911	43.1
5	Overbite	887	42.0
6	Anterior Open Bite	210	9.9
7	Crowding	1403	66.7
8	Spacing	482	22.8

Table 3: Prevalence of malocclusion in Male and Female

S.no.	Malocclusion Classification	Male N = 1121	Frequency %	Female N = 988	Frequency %
1	Class I	682	60.8	573	57.9
2	Class II	388	34.6	390	39.4
3	Class II div 1	245	21.8	295	29.8
4	Class II div 2	143	12.7	95	9.6
5	Class III	12	1.07	6	6.07
6	Class IV	18	1.6	11	1.11
7	Dick bliss	21	1.8	08	0.8
8	Overjet	510	45.4	401	40.5
9	Overbite	410	36.5	477	48.2*
10	Anterior Open Bite	122	10.8	88	8.9
11	Crowding	910	81.1	493	49.8
12	Spacing	110	9.8	372	37.6

DISCUSSION

There is existence of malocclusion which is 39% to 93% in different parts of the world27. Planning of orthodontic treatment for evaluation of patients may give valuable information. The malocclusion existence varies from one geographical area to another and differs from one country to another country and even from one city to another city. Angle's classification is very much helpful and useful for easy assessment which gives a common channel of knowledge among dental professionals.[25] It is an easy and rather accurate way to categorize malocclusions and is globally used in dental profession.

In the present study, it is found that Angle's Class I malocclusion prevalence was the most common malocclusion with 59.5 % followed by 36.8% Angle's class II and 8.2 % Angle's class III among the orthodontic patients examined. This finding is consistent with other studies. Proffit et al,[28] found in untreated White Americans of 8 - 50 years age, the Angle's Class I malocclusions was most prevalent, i.e., 52.2%, while Angle's Class II is 42.4% and less than 10% were Angle's Class III malocclusions. Another study on the pattern of malocclusion in Africa (Nigeria),[29] states that Angle's Class I malocclusion is 76.5%, Class II having 15.5% and Class III is 8.0%.

Increased crowding (81.1 %) in the sample studies was very high and thus the causes of crowding should be looked into in the future studies, so that proper preventive actions could be taken by creating awareness campaigns. Although frequency of crowding was almost same in females as compared to males, but the difference was not statistically significant. Drummonds found only 40 % children having crowding in the study done in South Africa.[30] Migration of first permanent molar, inclination and rotation is caused by carious teeth exfoliation and space closer due to lack of diagnosis which leads to high percentage of crowding. Genetics and racial differences controlling the growth of jaws; evolutionary trends in jaw growth; premature extractions of baby teeth without any space maintenance; unrestored caries and space loss; Ibyinyo (a type of oral mutilation i.e. a traditional practice in some parts of Katihar (SEEMANCHAL) and Africa where the deciduous teeth of certain baby are extracted in early days without preventing them out in early age to prevent GIT infections, fever and pain in a child); iatrogenic malocclusion created by extraction of certain deciduous teeth by non – orthodontists & other dentists etc can be some of the factors which may have contributed to increased crowding, which should be looked into in future studies. Loss of space in the posterior teeth is due to early loss of deciduous teeth. On the other hand, spacing was found to be present in only 22.8 % cases, thus showing the general trend worldwide that crowding is more prevalent than spacing due to evolutionary trends and dietary habits. However, the presence of spacing needs to be studied to find out the related causes.

CONCLUSION

In this hospital-based study, the frequency of Angle's Class I, Class II and Class III malocclusion was found to be 59.5%, 36.8% and 8.2% respectively. Out of all the problems studied, crowding was found to be the most common feature, followed by increased overjet, deep bite and anterior open bite in that order. To know occlusal problems and their occurrence need the treatment and it can help to determine the appropriate treatment plan and manpower needed in orthodontics. Such epidemiological surveys are extremely important as they can help in finding the factors leading to malocclusion, and thus help in planning the preventive and interceptive actions and awareness programs for the population.

After conducting the study, following recommendations can be enumerated:

- The causative factors of the irregularity of teeth and other malposition's should also be evaluated simultaneously so that preventive and interceptive measure could be planned.
- There is a strong need to conduct epidemiological studies on the population of SEEMANCHAL to find out the prevalence of malocclusion.

- More studies should be used in future involving the large number of subjects with random sampling, multi-centric studies should be conducted.
- The ENT surgeon needs to be associated in the study to evaluate the patients for chronic nasal allergy and mouth breathing habits to associate their relationship with the open bite etc.
- Proper awareness programs should be started to educate the masses and the school children to avoid the causative factors leading to malocclusion e.g. prevention of caries, trauma, early extraction of Deciduous teeth etc.
- The dental health manpower should be educated and trained so that they can manage the space left after premature extraction of baby teeth, or they should be sensitized to refer such patients to specialist for space management.
- The resources for minor and major orthodontic treatments; space maintainers and other preventive therapies should be made available in the hospitals and clinical settings.
- Since the early treatment can be done for some of these conditions so that their severity does not increase with age. This shows that children should be diagnosed and checked by their orthodontist at mixed dentition phase. Early Orthodontic treatment might decrease the occurrence of malocclusion and improve the aesthetic and psychological wellbeing of the children.
- The insurance providers should be educated & sensitized that they should not insist that orthodontic intervention can only be done in permanent teeth. There are certain conditions which need to be treated during mixed dentition period also to prevent the future development of skeletal, functional and aesthetic problems.

Acknowledgement

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Journal Of Medical Science And Clinical Research

IGM Publication   An Official Publication Of IGM Publication

HIV A Deadly Virus: Clinical Knowledge

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Abstract
HIV is a deadly virus and the person living with HIV is growing in the world. In rural and backward area, the knowledge regarding HIV is still less and this disease decrease the life of a person. The reality of mode of spread of infection, the occurrence of infection, the exposure of infection in Dentist is more as compared to other Profession of Medical world. Dentist is still doing all types of work like extraction, filling, Denture making without knowing the facts and figures of HIV related Disease. The aim of this article is to deal with the clinical aspect of HIV related issue.
Keywords: *HIV, Dentistry, AIDS.*

Introduction

In 1981 AIDS (Acquired Immunodeficiency Syndrome)was first identified that this disease is life thr eating disease and spreading worldwide.[1] Kimberly Ann Bergalis was an American woman who was one of six patients purportedly infected with HIV by dentist David J. Acer, who was infected with HIV and died of AIDS in September 1990. In September 1990 one case has been reported of Kimberly Ann Bergalis that she has been infected with HIV by a dentist David J Acer and died of AIDS.[2] Dentist knowledge regarding HIV is Satisfactory but doing work in clinical the satisfactory should be updated with perfection.[3] In patient the more common problem is bleeding from gums i.e. Periodontitis which leads a patient to visit a Dental Clinic. The Dentist without knowing that periodontitis is one of the major symptoms that a patient might be HIV infected.[4]It is found that the discrimination of dentist to HIV infected person is more than 50%.[5] The total number of people living with human immunodeficiency virus (HIV) in India is estimated at 21.40 lakhs in 2017 and Bihar (1.15 lakhs) is among one of the Seventh high prevalence states in India.[6]

Clinical View

HIV virus is deadly virus and in 1993 CDC (Centres for Disease Control and Prevention) gives the report that if CD4+ T-lymphocyte counts

remain below 200/mm³ or less than 14% of T lymphocyte have this deadly disease. In the initial stage there is no symptom of this infectious virus, but there are some cases where a mononucleosis-like illness develops 2 to 4 weeks after infection and lasts about 2 to 6 weeks. Due to this infection the person might feel rash, fever, malaise, arthralgias, and hepatosplenomegaly. Meningitis might present in some cases. The virus in its early stage persist in the genome of some cell and the person infected with this deadly virus.[7] Dr. David Ho introduced highly active antiretroviral therapy (HAART) in 1995 and it has transformed the infection from a death sentence to a chronic disease.[8] HAART has minimum effect on oral salivary flow. It has also decrease the Candida infection in the oral cavity.[9]

AIDS Diagnosis:[10,11]

There are 40 known Oral lesion of AIDS known as per date. HIV infection is basically divided into two categories. The first classification is based on aetiology and the second one is based on severity of infection. Based on aetiology it is fungal, bacterial, viral, neoplastic and others. Based on severity it is lesions strongly associated with HIV infection, lesions less commonly associated with HIV infection, and lesions seen in HIV infection. AIDS is diagnosed when an individual with HIV develops at least one of these conditions:

1. CD4+ T cell count drops below 200 cells/mm3.
2. Development of one of the following opportunistic infections (OIs):
   - Viral: cytomegalovirus (CMV) disease other than liver, spleen, or nodes; CMV retinitis (with loss of vision); herpes simplex with chronic ulcer(s) or bronchitis, pneumonitis, or esophagitis; progressive multifocal leukoencephalopathy (PML); extra pulmonary cryptococcosis
   - Fungal: candidiasis of bronchi, trachea, lungs, or esophagus;
   - Bacterial: *Mycobacterium tuberculosis* (any site); any disseminated or extra pulmonary mycobacterium, including *M. avium* complex or *M. kansasii*; recurrent pneumonia; recurrent Salmonella septicaemia
   - Protozoal: disseminated or extra pulmonary coccidioidomycosis, toxoplasmosis of the brain, chronic intestinal isosporiasis; chronic intestinal cryptosporidiosis
3. Development of one of the following opportunistic cancers:
   - Invasive cervical cancer, Kaposi's sarcoma (KS), Burkitt's lymphoma, immunoblastic lymphoma, primary lymphoma of the brain, or cervical carcinoma
4. Wasting syndrome occurs: defined as a loss of 10% or more of ideal body mass.
5. Dementia develops.

HIV Manifestation in oral Cavity:[12]

1	Viral Infection	Herpes simplex*Herpes zoster (varicella zoster) Cytomegalovirus, Epstein-Barr virus Hairy leukoplakia, Human papillomavirus, Oral warts, Condyloma acuminatum, Focal epithelial hyperplasia
2	Bacterial Infection	Linear gingival erythema* Necrotizing ulcerative periodontitis* Necrotizing stomatitis Mycobacterium avium intracellulare Actinomycosis.
3	Fungal Infection	Candidiasis*, Pseudomembranous, Erythematous Hyperplastic Angular chelitis, Histoplasmosis Cryptococcosis Geotrichosis
4	Neoplasm	Kaposi's sarcoma* Non-Hodgkin's lymphoma.
5	Others	Facial palsy, Trigeminal neuropathy, Recurrent thrombocytopenic purpura, Recurrent aphthous ulceration*, Herpetiform, Immune thrombocytopenic purpura Salivary gland enlargement Xerostomia Melanotic pigmentation.

*More Common Oral Lesion.

Patient indication to start Antiretroviral Therapy[13]

S.No.	Clinical Category	CD4 + T Cell Count	Plasma HIV RNA	Recommendation
1	Symptomatic (AIDS, Severe symptom)	Any Value	Any Value	Treat
2	Asymptomatic, AIDS	CD4 + T Cell < 200/mm³	Any Value	Treat
3	Asymptomatic	CD4 + T Cell 200/mm³ – 350 mm³	Any value	Treatment should generally be offered, though controversy exists*
4	Asymptomatic	CD4 + T Cell < 350/mm³	>30,000 (bDNA) or >55,000 (RT-PCR)	Some experts would recommend initiating therapy, recognizing that the 3-year risk of developing AIDS in untreated patients is >30%. In the absence of very high levels of plasma HIV RNA, some would defer therapy and monitor the CD4+ T cell count and

				level of plasma HIV RNA more frequently. Clinical outcomes data after initiating therapy are lacking.
5	Asymptomatic	CD4 + T Cell < 350/mm³	<30,000 (bDNA) or <55,000 (RT-PCR)	Many experts would defer therapy and observe, recognizing that the 3-year risk of developing AIDS in untreated patients is <15%.

Inactivation and Disinfection of HIV:[14]

Does HIV react to disinfectants as predicted by Klein and Deforest? This question can be answered based on laboratory studies. First, the experimental laboratory conditions must be defined, then the results must be interpreted based on comparisons with the laboratory conditions and the conditions that may exist in body fluids such as blood. In the human body, cell free HIV enters the CD4+ lymphocyte and can either become latent in the cell or replicate resulting in new virus being released into the surrounding milieu where virus may infect another CD4+ cell. The number of infected cells/ml in an infected individual's blood is estimated to be about 100-1000. The titer of cell free virus is estimated to be about 100 or less. Both cell-free HIV and infected cells may be present in the circulating blood.

In the laboratory, cell free HIV can be grown in CD4+ tissue culture cells. Generally, the virus containing supernatant fluid is harvested and the titer of cell free virus ranges from 104 to 106 per unit volume, titers higher than generally found in blood. The amounts of protein and other organic materials in laboratory tissue culture fluid are usually less than that found in blood.

Laboratory inactivation studies have been performed by mixing an equal volume of virus containing fluid and disinfectant for varying periods of time. Following the inactivation process, serial dilutions of each test disinfectant and controls were plated into CD4+ cells. After 7 days, the supernatant fluids from each dilution were harvested and tested for presence of virus using an ELISA. Additional incubation time may be needed to detect low levels of virus remaining following the inactivation step. The lack of viral replication indicated inactivation of the virus by the disinfectant. Controls must be done to determine if the test disinfectant killed the indicator CD4+ cells which would also result in no detection of viral replication.

Summary of chemical inactivation for cell free HIV :[15-27]

S.No.	Chemical	Concentration or Percentage reported to inactivate cell free HIV
1	Sodium hypochlorite	>52.5 ppm
2	Glutaraldehyde	0.0125%
3	Glutaraldehyde-alkaline	1-2%
4	Formaldehyde	0.04-2%
5	Formaldehyde + β-propiolactone	0.025-.25%
6	Paraformaldehyde	0.5%
7	β-propiolactone	0.025-25%
8	Acetone	50%
9	Ether	100 %
10	Hydrogen Peroxide	0.3%
11	Betadine II	0.125-.5%
12	Betadine Surgical Scrub	.005-.025 available I₂
13	Sodium Hydroxide	0.12%
14	Phosphoric acid	2-8%

Conclusion

A Precise knowledge is necessary to handle a HIV infected person in medical as well as in dental field. Oral lesion is the first and foremost sign to know HIV infected person. After doing Surgical or non-surgical work a medical person should know how to clean their instrument before using to another person. In day to day life the difficulty index to diagnose HIV infected person and treatment plan depends upon the more and more knowledge regarding HIV DEADLY VIRUS.

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