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RESEARCH ARTICLE

THE ROLE OF A DENTAL SURGEON IN A MULTIPROFESSIONAL TEAM OF INTENSIVE CARE UNITS: A WAY OF ORAL HYGIENE CONTROL, AIMING BIOFILM REDUCTION AND DECREASE IN THE INCIDENCE OF PNEUMONIA CAUSED BY MECHANICAL VENTILATION.

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Abstract

This article aims to point out the role of dental surgeon in Intensive Care Units, aiming the decrease in the incidence of pneumonia caused by mechanical ventilation by promoting oral hygiene. We used bibliographic reviews and the observation of random studies as data collection. We highlight the role of the members of multiprofessional teams. Besides that, we describe the causes and effects having the premise that taking care - considering all the changes in a multicultural society - has been considered a sophisticated activity, since there is a wide range of techniques and procedures available, which can add success in the quality of the provided service.

Introduction:-

The approach of the subject that involves the dental surgeon's performance in an extra-cultural and / or clinical environment has been discussed and gaining greater visibility, especially regarding the inclusion of this professional in multidisciplinary teams in hospital environments - as foreseen in Bill No. 2,776, April 2008 - primarily in intensive care units (ICUs), developing evaluations and conducting conducts, in order to increase the interaction among ICU members, proving the close relationship between the different professionals, keeping the importance of each [1,2].

The promotion of oral hygiene in the ICUs should be elaborated according to the Standard Operating Procedures - POPs of each Institution, aiming emphatically at reducing the incidence of nosocomial pneumonia, as well as the prolonged period of hospitalization, which contributes to the delay in recovery and subsequent systemic complications due to immunodepression caused by critical environment [2,3].

Oral hygiene, especially in patients submitted to orotracheal intubation (OTI) and mechanical ventilation (MV), has many beneficial effects to the prevention of pneumonia associated with this particular disease, through the reduction of pathogens and microbiota present in the oral cavity , a site that is listed as an important reservoir of microorganisms making them increasingly complex [4-7].

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For Mojon et al. (2002) [8] and Scannapieco et al. (2003) [15], the biofilm plaque that is inserted on the dorsum of the tongue and the surfaces of the dental elements is responsible for the accumulation of bacterial flora, which can affect the patient locally or systemically.

Multiprofessional collaboration, especially nursing and physiotherapy, dealing directly with the patient, has been of great importance, aiming to isolate procedures for each specialty and emphasizing the improvement both in the treatment with the patient, in the development of techniques and procedures, providing greater comfort and well-being [9-14].

Among all the extrinsic and intrinsic factors, in addition to the hospital environment, the attenuation of the pathology can be given by means of: smoking, alcoholism, inadequate oral hygiene, clinical treatment with antibioticoretapia or corticoids and deficient feeding [12-14].

This article aims to point out the role of dental surgeon in Intensive Care Units, aiming the decrease in the incidence of pneumonia caused by mechanical ventilation by promoting oral hygiene.

Methods:-

Experimental and clinical studies were included (case reports, retrospective, prospective and randomized trials) with qualitative and / or quantitative analysis. Initially, the key words were determined by searching the DeCS tool (Descriptors in Health Sciences, BIREME base) and later verified and validated by MeSh system (Medical Subject Headings, the US National Library of Medicine) in order to achieve consistent search.

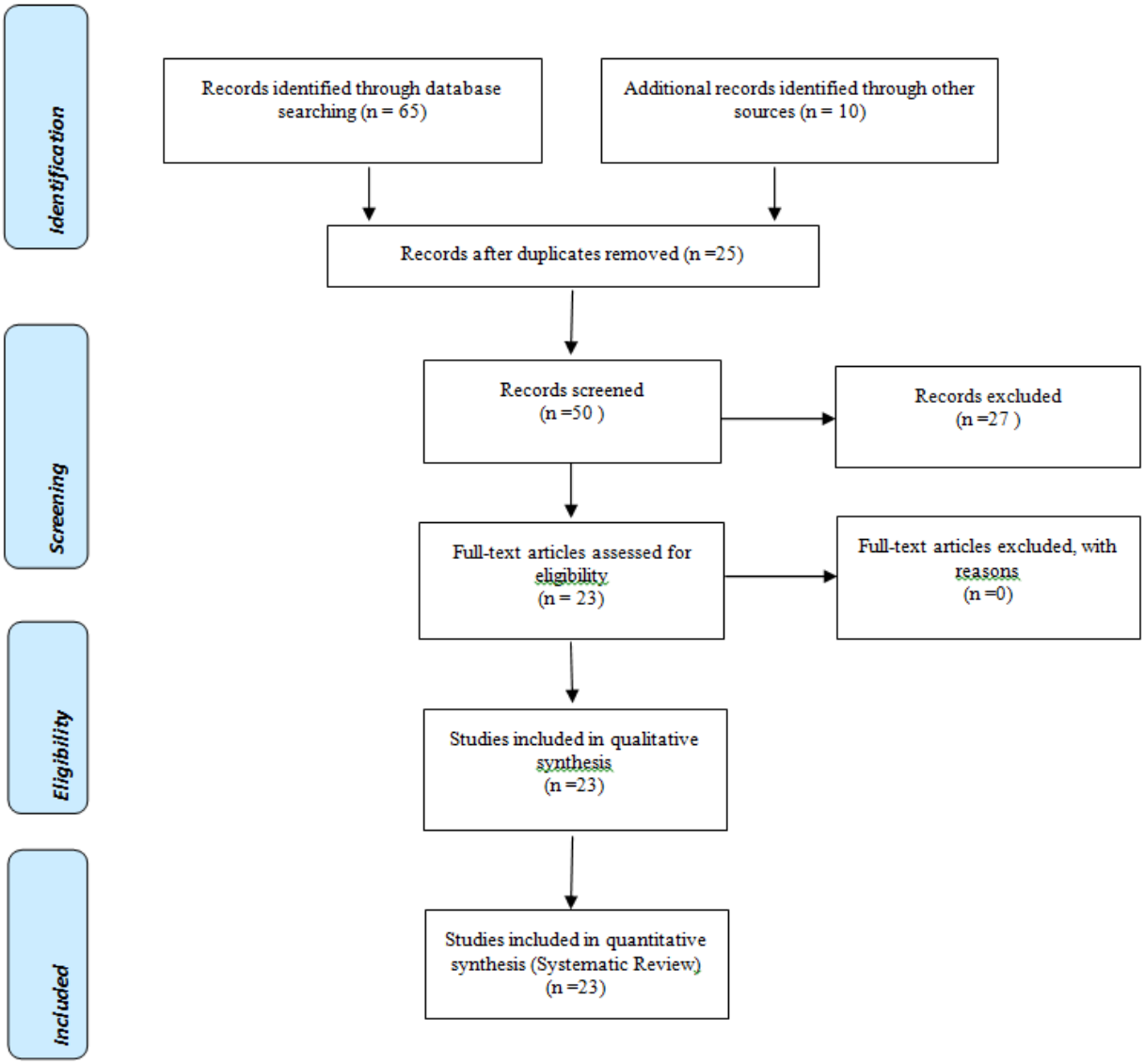
Mesh Terms:-

The words were included "Intensive Care Unit". “Oral hygiene”. “Mechanical ventilation”. “Biofilm”. "Clinical research". For further specification, the "Anterior Maxilla" description for refinement was added during searches. The literature search was conducted through online databases: Pubmed, Periodicos.com and Google Scholar. It was stipulated deadline, and the related search covering all available literature on virtual libraries.

Series of Articles And Eligibility:-

A total of 23 articles were found involving sedation in children. Initially, it was held the exclusion existing title and duplications in accordance with the interest described this work. After this process, the summaries were evaluated and a new exclusion was held. A total of 25 articles were evaluated in full, and 16 were included and discussed in this study.

Flow Chart:-



Development:-

Nosocomial pneumonia:-

Pneumonia is a debilitating infection, especially in the elderly and immunocompromised patient [1-5]. It is the second leading cause of hospital infection and is responsible for significant rates of morbidity and mortality in patients of all ages [15]. As well as increased hospitalization time, it may be favored or aggravated by neglected oral hygiene during the period of hospitalization of patients [16].

Patients intubated and mechanically ventilated (MV) for more than 48 hours have a 6 to 21-fold increased risk of developing VAP. Mechanically ventilated pneumonia (VAP) is an inflammatory response of the host to the uncontrolled multiplication of microorganisms invading the distal airways. In the histological study, pneumonia is characterized by the accumulation of neutrophils in the region of the distal bronchioles and alveoli [17].

Buccal microbiota:-

The establishment of nosocomial pneumonia occurs with bacterial invasion, especially Gram-negative rods (Acinetobacter spp., Staphylococcus aureus, Esherihia coli, Klebsiella spp, Pseudomonas aeruginosa, Enterobacter spp., And Proteus mirabiis) in the lower respiratory tract through aspiration of secretion present in the oropharynx,

by inhalation of contaminated aerosols or, less frequently, by hematogenous dissemination originating from a distant focus [18].

The reduction of salivary flow allows the increase of the lingual biofilm (stagnant organic matrix) on the dorsum of the tongue, which favors the production of volatile sulfur components such as mercaptanes (SH SH) and sulphydrites (SH) that have an unpleasant odor and bacterial colonization [19].

Other bacteria can also be observed, such as Acinetobacter baumanii, S. coagulase negative, Enterobacter, P. aeruginosa, S. viridans, Corinebacterium sp, Enterococcus sp, Klebisiella sp, Serratia sp, Pseudomonas sp, M. morganii, Streptococcus group D and Candida sp [20].

The performance of the dental surgeon in the Intensive Care Unit:-
In most of the Brazilian hospitals there is no oral infection control protocol and its implementation can help reduce the morbidity and mortality of inpatients [20]. It is important to emphasize that the cooperation between dental surgeons and the multiprofessional health team within the hospitals will offer benefit to the patient [21].

The insertion of the dental surgeon with the medical team is essential, since it emphasizes in a comprehensive way the patient's health, favoring a better prognosis and recovery [22]. Establishing a favorable and non-cooperative oral health condition to the occurrence of opportunistic diseases [22].

Assessment of oral health status:-
To evaluate the oral health condition, the bacterial plaque index criterion of Greene and Vermillion, which evaluates the surfaces covered by bacterial plaque by vestibular and lingual of the second molars and the upper and lower central incisors [23] can be used. Oral hygiene index: 0 - There is no plaque; 1 - The plate is detected only when passing the exploratory probe; 2 - The plaque is detected at the gingival edges and free interdental spaces; 3 - The plaque is abundant and thick, occupying the dento-gingival and interdental spaces. Plate index: 0 - Absence of plate; 1 - Vertical spots; 2 - Plate of 01 mm in cervical; 3 - Plate of more than 01 mm, which affects less than one third of the crown; 4 - Plate that affects more than one third and less than two thirds of the crown; 5 - Plate affects more than two thirds of the crown. The points are added, multiplied by the number of elements examined and multiplied by one hundred, to obtain the coefficient referring to the plaque index.

Importance of hygiene:-
The maintenance of oral health aims at the global treatment of the patient, since the buccal cavity is the first port of entry for respiratory pathogenic microorganisms that cause systemic infections [3,4].

Oral hygiene in ICU patients is considered a basic and essential procedure, whose main objective is to maintain the health of oral tissues. This procedure is necessary to prevent infections, maintain mucosal moisture and promote patient comfort [5].

Oral hygiene deficiency of critically ill patients can frequently lead to periodontitis, gingivitis and other oral and systemic complications [6-8]. Oral hygiene in these patients is essential to reduce the incidence of mechanical aspiration pneumonia. In addition to daily oral hygiene, there are specific protocols for intervention and improvement of cases such as cancer patients, candidiasis, oral infectious process, among others [9].

Products used in oral hygiene:-
The choice of an enzymatic product as an auxiliary method in the reduction of the buccal bacterial plaque is due to the lack of an abrasive substance (alcohol, detergent, dye) that further damages the already compromised oral mucosa [10].

Methodology and prevention measures:-
The prevention measures with patients submitted to VAP, aim at: the use of PPE; hand hygiene; when starting the mechanical ventilation, to be attentive to the care before and during the assembly of the same, at the beginning of the ventilatory process and when installing the nebulization; care during the technique of tracheal aspiration and bronchial hygiene; hygiene of the oral cavity, according to the protocol implanted by the unit; check the cuff pressure whenever manipulating the TOT and / or tracheostomy; correctly positioning the patient in the bed, being

attentive to the elevation of the head and making changes of decubitus; strictly observe the installation and maintenance of enteral diet infusion, probe testing whenever it is to be manipulated [11].

The promotion of oral health in a hospital environment has become increasingly important given that there are innumerous advantages obtained with the presence of the dental surgeon, especially in the Intensive Care Units, as recommended by Law Project No. 2.776, April 2008 [12].

Conflict of interests:-
There is no conflict of interest between authors.

Final Considerations:-
The primary role of the dental surgeon is the assessment of the patient in intensive care, with emphasis on those who undergo TOT - orotracheal tube and MV - mechanical ventilation. All procedures should be recorded in medical records if you have not implemented an appropriate CD form at the Institution. The professional is responsible for controlling the dental biofilm, identifying and eliminating infectious foci and standardizing the use of solutions for oral hygiene. In a global view, all aspects evaluated and applied by the CD, are aimed at reducing infections such as nosocomial pneumonia and reducing hospitalization periods.

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