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Short communication

Experimental Gingivitis a Critical Analysis

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Since Löe, Theilade, and Jensen in 1995 published the research: "Experimental gingivitis in man"; this research became a landmark proving that periodontal disease has as main etiologic factor the accumulations of plaque around the teeth [1,2]. The researchers studied a group of individuals with previously excellent oral hygiene and healthy gingivae. After 9 - 21 days without oral hygiene eleven experimental individuals developed substantial accumulations of plaque and generalized mild gingivitis. The specific rate of development of gingivitis was closely linked with the rate of plaque accumulation. Bacteriological changes were verified in the bacterial plaque around the gingival margin during the experiment. The correlation between time and quality and quantity of bacterial plaque accumulation was equal for all subjects. The gingival condition was correlated with the composition of the plaque. However it was found that gingivitis could not be diagnosed clinically at approximately the same time as the complex flora was established for all individuals. The first individual developed gingivitis in day 9 and the others individuals developed gingivitis in subsequent days until the last one, be diagnosed with gingivitis in day 21. This detail shows that individuals were susceptible to different times of the bacterial plaque accumulation and also to different quantities and qualities of bacterial plaque accumulation, since, the quality and quantity of bacterial plaque accumulation was equal for all subjects when was harvested and was checked in a specific day. When oral hygiene was instituted, the bacterial plaque in most areas was controlled. The gingival inflammation disappeared one day after the plaque control establishment. The main conclusion of this research was: bacterial plaque accumulation may cause gingivitis and bacterial plaque control may induce gingival health. However some questions arise from this historical research [4]: 1- why some individuals developed gingivitis in day 9 and others individuals developed gingivitis in subsequent days, until the last one be diagnosed with gingivitis in day 21, if the bacterial flora was equal for all individuals in a determined time. The answer is: gingivitis present multifactorial etiology and each individual respond in different ways from different qualities and quantitates of the bacterial plaque attack, depending of the local and general predisposing factors which may be associated with a specific moment of the fragility of the individual. 2- Why the teeth should be brushed 3 time per day if only after 9 - 21 days without oral hygiene eleven experimental individuals developed substantial accumulations of plaque and generalized mild gingivitis. 3- If it may take up to 21 days of plaque accumulation for some individuals to present gingivitis, how much plaque accumulation would be required to induce periodontitis. This condition is impossible to be studied in humans. Only without oral hygiene will be impossible to induce periodontitis experimental in animals. To establish periodontitis experimental in animals a local or general predisposing risk factor will be essential to in association with bacterial plaque provoke periodontitis [3]. Then gingivitis and periodontitis are considered diseases with multifactorial etiologic factors. Why the focus of the treatment of these alterations is bacterial plaque control which all individuals present and is impossible to establish an efficient control, if researchers still cannot know what kind of bacteria really initiate these alterations. It would not be easier to control the predisposing risk factors that only some individuals possess than establish a program of the bacterial plaque control. These arguments should be studied and answered to improve the prevention and treatment of gingivitis and periodontitis.

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