

# Infeksi Endodontik sebagai Faktor Prediktor Penyakit Jantung Koroner Aterosklerosis. (Kajian epidemiologi klinik) = Endodontic Infection as A Predictive Factor of Atherosclerosis Coronary Heart Disease (Clinical Epidemiology Study)

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## Abstrak

Background: Infeksi Endodontik dapat menjadi faktor prediktor penyakit jantung koroner (PJK) aterosklerosis. Penyakit ini terjadi karena merespon proses inflamatori akibat infeksi bakteri *Porphyromonas endodontalis*. Beberapa literatur mengatakan bahwa etiologi penyakit kardiovaskular disebabkan infeksi kronik. Diduga bakteri *Porphyromonas endodontalis* yang ada dalam Infeksi Endodontik (IE) dapat juga menjadi faktor prediktor PJK aterosklerosis. Objective: Mengetahui peran dan potensi IE sebagai faktor prediktor PJK aterosklerosis dan juga peran sitokin inflamatori, IL-1, IL-6, hsCRP, TNF- dalam kaitannya akan hubungan IE dan PJK aterosklerosis. Method: Dilakukan riset rancangan kasus kontrol dengan mengamati ada terpaparnya IE pada penderita PJK aterosklerosis. Dibagi menjadi kelompok subjek PJK aterosklerosis dengan IE sebagai kasus dan kelompok subjek bukan PJK aterosklerosis dan tanpa IE sebagai kontrol. Subjek dilihat intra oralnya terutama jaringan periapikal dan jaringan periodontal, dicatat faktor-faktor tradisional penyebab PJK serta diukur kadar IL-1, IL-6, hsCRP, TNF- di dalam darah sirkulasi. Dicatat juga adanya gastritis, psoriasis, dan periodontitis. Results: Dianalisis dengan regresi logistik terlihat ada peran yang potensial ( $p < 0,041$ ) Infeksi Endodontik sebagai penyebab penyakit jantung koroner aterosklerosis. IL-1, IL-6, dan CRP di dalam darah sirkulasi tidak berbeda bermakna setelah dianalisis dengan tes Mann-Whitney, walaupun median setiap kelompok variabel lebih tinggi pada kelompok kasus daripada kontrol. Hanya TNF- yang berbeda bermakna ( $p < 0,019$ ) setelah dianalisis dengan uji-t. Conclusion: Infeksi Endodontik mempunyai peran yang potensial menjadi faktor prediktor penyakit jantung koroner aterosklerosis dan mungkin hanya TNF- yang terlibat dalam mekanisme terjadinya PJK karena IE. ....Endodontic infection can be a predictive factor of atherosclerosis coronary heart disease (CHD). This disease occurs because it responds to the inflammatory process caused by infection of *Porphyromonas endodontalis* bacteria. Several literature state that the etiology of cardiovascular disease is caused by chronic infection. *Porphyromonas endodontalis* bacteria inside Endodontic Infection (EI) is also assumed to be a predictive factor of atherosclerosis CHD. The purpose of this research is to determine the role and potential of EI as a predictive factor of atherosclerosis CHD as well as the role of inflammatory cytokines, IL-1, IL-6, hsCRP, TNF- in relation to the relationship of EI and atherosclerosis CHD. This research used a case control design research method by observing EI exposure in atherosclerosis CHD patients. Subjects were divided into atherosclerosis CHD subjects with IE as case and non-atherosclerosis CHD subjects without IE as the control. On the subjects, their intraoral was observed, specifically the periapical tissue and periodontal tissue, the traditional factors causing CHD were recorded and the level of IL-1, IL-6, hsCRP, TNF- in circulating blood was measured. The presence of gastritis, psoriasis, and periodontitis was also recorded. The results of data analysis in this research with logistic regression showed that there was a potential role ( $p < 0.041$ ) of endodontic infection as a cause of atherosclerosis CHD. IL-1, IL-6, and CRP in circulating blood do not differ significantly after being analyzed by Mann-Whitney test even though the median of each

group was higher in the case than the control group. It was only TNF- that was significantly different ( $p < 0.019$ ) after being analyzed by t-test. Therefore, the researcher concludes that endodontic infection has a potential role as a predictive factor of atherosclerosis CHD and probably it is only TNF- that is involved in the mechanism of CHD incidence due to IE.