

# Peran hidroklorokuin terhadap disfungsi endotel pasien artritis reumatoid: kajian peran homa-ir, oxldl dan free fatty acid beserta korelasinya terhadap disfungsi endotel = Role of hydroxychloroquine on endothelial dysfunction in rheumatoid arthritis patients study of homa ir oxldl and free fatty acid roles and the correlation with endothelial dysfunction

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## Abstrak

### <b>ABSTRAK</b><br>

Penelitian ini bertujuan untuk mengetahui efek pemberian hidroklorokuin 400 mg selama 12 minggu terhadap kadar sVCAM-1 dan sE-Selectin sebagai petanda disfungsi endotel pada pasien artritis reumatoid. Penelitian ini juga melihat peran HOMA-IR, FFA dan ox-LDL terhadap perbaikan disfungsi endotel. Penelitian ini menggunakan dua disain yaitu uji klinis acak tersamar ganda dan kohort prospektif dilakukan pada pasien artritis reumatoid dengan terapi metotreksat di poliklinik Reumatologi RS Cipto Mangunkusumo, Jakarta, pada periode Februari 2016-Mei 2017. Pasien dengan terapi insulin, anti-hipertensi dan terapi lain yang mempengaruhi kadar sVCAM-1 dan sE-Selectin dieksklusi dari penelitian. Subjek yang eligibel dirandomisasi menjadi dua kelompok, kelompok yang mendapat hidroklorokuin HCQ 400 mg dan kelompok placebo, dan diikuti selama 12 minggu. Pemeriksaan sVCAM-1, sE-Selectin, HOMA-IR, FFA dan ox-LDL dilakukan pada awal penelitian dan pada minggu ke-12. Perbedaan persentase perubahan kadar sVCAM-1 dan sE-Selectin sebelum dan setelah perlakuan antara kedua kelompok dianalisis dengan uji-t dan uji Mann-Whitney. Persentase perubahan kadar sVCAM-1 dan sE-Selectin dikorelasikan dengan persentase perubahan HOMA-IR, FFA dan ox-LDL, dengan uji Spearman. Sebanyak 37 subjek diikuti dalam penelitian, dan terdapat 3 subjek yang drop-out pada masing-masing kelompok, sehingga didapatkan 15 subjek pada kelompok HCQ dan 16 subjek pada kelompok placebo. Kadar sVCAM-1 serum minggu ke-12 pada kelompok HCQ menurun sebesar 17,1 median, sementara pada kelompok plasebo meningkat sebesar 9,7, dan perbedaan tersebut bermakna secara statistik. Kadar E-Selectin pada kelompok terapi HCQ mengalami penurunan dalam persen yang lebih besar dibandingkan pada kelompok placebo, tapi perbedaan tersebut tidak bermakna. Perubahan kadar sVCAM-1 dan sE-Selectin, juga dibuktikan tidak berkorelasi dengan perubahan HOMA-IR, FFA dan ox-LDL. Terapi hidroklorokuin pada pasien artritis reumatoid terbukti memperbaiki disfungsi endotel dengan menurunkan kadar sVCAM-1, namun tidak terbukti menurunkan sE-Selectin. Variable sVCAM-1 dan sE-Selectin tidak berkorelasi dengan HOMA-IR, FFA dan ox-LDL. Kata kunci: artritis reumatoid, disfungsi endotel, hidroklorokuin, sE-Selectin, sVCAM-1.<hr />

### <b>ABSTRACT</b><br>

This study aims to evaluate the effect of hydroxychloroquine on sVCAM 1 and sE Selectin levels decreasing as endothelial dysfunction marker in rheumatoid arthritis patients. This study also assessed the correlation between changes in sVCAM 1 and sE Selectin levels with other variables of changes in HOMA IR, FFA and ox LDL. Two kinds of methods i.e. double blind randomized controlled trial and prospective cohort, were conducted, on patients with rheumatoid arthritis with methotrexate treatment at Rheumatology Outpatient Clinic of Cipto Mangunkusumo Hospital Faculty of Medicine Universitas Indonesia, Jakarta, during

February 2016 July 2017. Patients with insulin, anti hypertension and other treatment which could affect sVCAM 1 and sE Selectin level, were excluded. Eligible subjects were randomly assigned into two groups. Eighteen subjects were administered hydroxychloroquine 400 mg daily and 19 patients were given placebo for 12 weeks. sVCAM 1, sE Selectin, HOMA IR, FFA dan ox LDL were examined in the beginning and in the end week 12. Differences of serum sVCAM 1 and sE Selectin level in percentage, before and after experiment, were evaluated, by T test or alternatively by Mann Whitney test. Differences of serum sVCAM 1 and sE Selectin level in percentage, were correlated with difference of serum HOMA IR, FFA and ox LDL level, by Spearman test. There were 37 subjects enrolled in the study, and there were 3 drop out subjects in each group, finally there were 15 subjects in the HCQ group and 16 in the placebo group. Serum sVCAM 1 level decreased 17.1 median in HCQ treatment group, while in placebo group, it increased 9,7 median compared with pre treatment value. The difference in percentage rate change of sVCAM between two group was significant. On the other hand, the change of E Selectin serum level in HCQ group was found a higher percentage of decrease compared with placebo group, but the difference was not significant. Changes in sVCAM 1 and sE Selectin levels were also proven no correlation with HOMA IR, FFA and ox LDL changes. Treatment of HCQ in patients with rheumatoid arthritis appears beneficial to improve endothelial dysfunction by lowering serum sVCAM 1, but not proven to decrease sE Selectin. The sVCAM 1 and sE Selectin variables were not correlated with HOMA IR, FFA and ox LDL

Keywords endothelial dysfunction, hydroxychloroquine, rheumatoid arthritis, sE Selectin, sVCAM 1.