

Association between serum uric acid and non-alcoholic fatty liver disease: A meta-analysis

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Abstrak

Background: non alcoholic fatty liver disease (NAFLD) is known to be associated with some metabolic disorders. Recent studies suggested the role of uric acid in NAFLD through oxidative stress and inflammatory process. This study is aimed to evaluate the association between serum uric acid and NAFLD. **Methods:** a systematic literature review was conducted using Pubmed and Cochrane library. The quality of all studies was assessed using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE). All data were analyzed using REVIEW MANAGER 5.3. **Results:** eleven studies from America and Asia involving 100,275 subjects were included. The pooled adjusted OR for NAFLD was 1.92 (95% CI: 1.66-2.23; $p < 0.00001$). Subgroup analyses were done based on study design, gender, non-diabetic subjects, non-obese subjects. All subgroup analyses showed statistically significant adjusted OR and most of which having low to moderate heterogeneity. Two studies revealed relationship between increased serum uric acid levels and severity of NAFLD. No publication bias was observed.

Conclusion: our study demonstrated association between serum uric acid level and NAFLD. This finding brings a new insight of uric acid in clinical practice. Increased in serum uric acid levels might serve as a trigger for physician to screen for NAFLD.

.....Latar belakang: perlemakan hati non-alkoholik (PHNA) berhubungan dengan berbagai penyakit metabolik. Penelitian terbaru menunjukkan peranan asam urat pada PHNA melalui proses oksidatif dan inflamasi. Laporan ini bertujuan mengevaluasi hubungan antara kadar asam urat serum dengan PHNA. Metode: tinjauan pustaka sistematis dilakukan dengan menggunakan Pubmed dan Cochrane library. Kualitas dari setiap studi dikaji dengan menggunakan the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE). Semua data dianalisis dengan menggunakan REVIEW MANAGER 5.3.

Hasil: didapatkan 11 studi dari Amerika dan Asia yang secara keseluruhan melibatkan 100.275 subjek. Pooled adjusted OR untuk NAFLD adalah 1,92 (95% CI: 1,66-2,23; $p < 0,00001$). Analisis subgroup dilakukan berdasarkan desain studi, gender, subjek non diabetes, subjek non obese. Semua analisa subgroup menunjukkan adjusted OR yang bermakna secara statistik dan heterogenitas yang rendah hingga sedang pada mayoritas analisis subgroup. Dua studi menunjukkan hubungan antara kenaikan serum asam urat dengan tingkat keparahan PHNA. Bias publikasi tidak ditemukan pada laporan ini.

Kesimpulan: laporan ini menunjukkan hubungan antara kadar serum asam urat dengan PHNA. Temuan ini dapat memberikan pandangan yang baru terhadap asam urat dalam praktik klinis. Peningkatan kadar serum asam urat dapat menjadi pemicu bagi dokter untuk melakukan skrining PHNA.