

# Keselarasan skor USG dan skor MRI serta hubungannya dengan kadar C-terminal telopeptide type II collagen urin dalam deteksi dini artropati hemofilik lutut = Association between us score and MRI score and ITS correlation with urinary C-terminal telopeptide type II collagen level in early detection of knee haemophilic arthropathy

Marcel Prasetyo, author

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## Abstrak

Latar belakang: Evaluasi sendi pada penyandang hemofilia memerlukan metode yang objektif dan terukur. USG sebagai metode yang relatif baru untuk artropati hemofilik AH belum memiliki konsensus sistem skor, sementara MRI telah memiliki sistem skor International Prophylaxis Study Group dari World Federation of Hemophilia IPSG-WFH. Penelitian ini mengembangkan sistem skor USG baru untuk artropati hemofilik lutut tahap dini, dan menilai keselarasannya dengan skor MRI IPSG-WFH dan kadar CTX-II urin.

Metode: Penelitian ini menggunakan desain potong lintang. Formulasi skor USG berdasarkan pada studi pustaka terhadap 25 publikasi terkait sejak tahun 1999 - 2015 dan peer review. Terdapat 27 anak penyandang hemofilia A berat yang dipilih secara konsekutif. AH lutut tahap dini ditetapkan berdasarkan klasifikasi radiografi Arnold-Hilgartner derajat 0 - II. USG dan MRI lutut dilakukan dengan penilaian skor MRI IPSG-WFH dan skor USG yang baru. Kadar CTX-II urin ditetapkan dengan pemeriksaan ELISA. Data dianalisis dengan uji Spearman.

Hasil: Sistem skor USG baru meliputi komponen efusi sendi, hipertrofi sinovium, hipervaskularisasi sinovium dengan Power Doppler, deposisi hemosiderin, dan kerusakan kartilago pada troklea femoris. Terdapat korelasi sedang antara skor USG dengan skor MRI. Tidak ada korelasi skor USG dengan CTX-II urin.

Kesimpulan: Skor US baru ini dapat digunakan sebagai alternatif MRI pada AH lutut tahap dini.

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Introduction Assessment of knee haemophilic arthropathy HA required an objective measures. There was no consensus on preferable US scoring system, while MRI already had a scoring system developed by the International Prophylaxis Study Group of the World Federation of Hemophilia IPSG WFH. This study developed a new US scoring system for early knee HA and its association with MRI scoring system and urinary CTX II level.

Method The study was cross sectional. US scoring system was developed based on literature studies of 25 publications between 1999 - 2015 and peer review. Twenty seven children with severe haemophilia A was recruited consecutively. Early HA was confirmed by radiography as Arnold Hilgartner stage 0 - II. Knee MRI and US were scored using MRI IPSG WFH scoring system and the new US scoring system, while urinary CTX II level was measured using ELISA. Correlation was analyzed using Spearman test.

Results US scoring system included joint effusion, synovial hypertrophy, synovial hypervascularization using Power Doppler, hemosiderin deposition, and cartilage damage. Moderate correlation was found between US score and MRI score. There was no correlation between US score and urinary CTX II level.

Conclusion The new US score can be used as an alternative for MRI in the assessment of early knee HA.