Detection of subclinical synovitis in patients with rheumatoid arthritis in clinical remission

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Objectives: To detect the prevalence of subclinical synovitis in patients with rheumatoid arthritis (RA) in clinical remission by musculoskeletal ultrasonography (USG) and to define possible predictors for the presence of subclinical synovitis.

Methods: A total of 37 RA patients receiving disease-modifying anti-rheumatic drugs (DMARDs) with disease in clinical remission were recruited. They were subject to clinical, laboratory, functional status or quality-of-life and radiographic evaluation at baseline. Disease Activity Score 28-joint assessment (DAS-28) was calculated. Musculoskeletal USG including both grey-scale and power Doppler techniques to the dorsal aspect of both wrists and all metacarpophalangeal joints was performed on each subject.

Results: Of 37 RA patients with clinical remission, nine were found to have increased power Doppler signal by USG, signifying the presence of subclinical synovitis, the prevalence rate being 24.3%. The continuous DAS-28 with three variables version using C-reactive protein (DAS-28 CRP v3) was the only independent predictor for the presence of USG-detected subclinical synovitis in the multivariate analysis with the odds ratio (OR) of 8.158, P=0.052. The cut-off value of DAS-28 CRP v3 was found to be 2.32 with the sensitivity of 66.7% and specificity of 78.6% for the presence of USG-detected subclinical synovitis.

Conclusion: Musculoskeletal USG is more sensitive than clinical assessment to detect subclinical synovitis. USG with grey-scale and power Doppler in combination with clinical assessment allows more accurate evaluation of the disease status, especially for the definition of true remission. DAS-28 CRP v3 may be used as a guide to stratify those relatively higher-risk stable RA patients for proceeding to musculoskeletal USG examination to delineate the true disease status and to optimise maintenance therapy.

High-sensitivity C-reactive protein and other inflammatory markers in predicting cardiovascular risk in Hong Kong Chinese

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Introduction: Inflammation is increasingly recognised as a key player in atherosclerosis, and C-reactive protein measured using high-sensitivity assay (hsCRP) is the most promising inflammatory marker in predicting the risk of cardiovascular diseases (CVD). In this prospective cohort study, we examined the predictive value of hsCRP for CVD in Hong Kong Chinese and determined if other biomarkers would enhance the predictive value of hsCRP.

Methods: Subjects were recruited from the Hong Kong Cardiovascular Risk Factors Prevalence Study 2 (CRISPS-2) cohort. Those with known cardiovascular disease(s) were excluded. Baseline serum levels of adiponectin, leptin, soluble tumour necrosis factor alpha receptor 2 (sTNFR2) and hsCRP were determined and subjects were followed prospectively for 6 years.

Results: A total of 1785 subjects were included in the final analysis. The cumulative incidence of CVD was 3.4%. At baseline, subjects with incident CVD were older, and had higher body mass index (BMI), waist circumference (WC), systolic blood pressure (BP), HOMA-IR, and fasting glucose levels (all P<0.001), compared to those who did not develop CVD (non-CVD). They also had higher baseline levels of leptin and sTNFR2 (both P<0.001) and hsCRP (median [interquartile range], 1.76 [0.87-2.55] mg/L vs 0.69 [0.32-1.49] mg/dL in non-CVD; P<0.001), but similar adiponectin levels, compared to non-CVD subjects. Logistic regression showed that baseline hsCRP was an independent predictor of CVD (P=0.003) after controlling for the conventional CVD risk factors, and for leptin and sTNFR2. The predictive value of leptin or sTNFR2 was not significant after adjustment for conventional CVD risk factors, hsCRP and each other. Serum hsCRP levels tertile analysis (<0.45 mg/L, 0.45-1.2 mg/L and >1.2 mg/L) showed that compared to subjects in the lowest tertile, those in the highest tertile had an odds ratio of 3.362 for incident CVD (95% CI, 1.249-9.052; P=0.016). Receiver operating characteristics curve analysis found that an hsCRP level of ≥1 mg/L had the most optimal sensitivity and specificity for CVD prediction.

Conclusion: In this 6-year prospective study, hsCRP was an independent predictive factor of CVD in Hong Kong Chinese, in addition to conventional CVD risk factors. Measurement of adiponectin and other inflammatory biomarkers tested in this study did not provide any adjunctive predictive value.

Acknowledgement: This study was supported by the Health & Health Services Research Fund (#06070951).