Objectives The goal of the study was to assess the frequency of Baker's cyst in rheumatoid arthritis patients in comparison to other groups of patients and healthy persons.

Methods With the real time ultrasonographic device with 7,5 MHz linear probe we examined knee joints of a group of 60 RA patients; 30 health persons served as a control group; the second control group were 60 perimenopausal women.

Results We found Bakre's cysts in 25 out of 60 RA patients (in 5 cases located in both knees). Among healthy persons there was one person with diagnosed popliteal cyst. In a group of perimenopausal women there were two patients with the cyst.

Conclusion This study shows the frequency of Bakre's cyst in RA patients in comparison with other groups of patients. Although the study was conducted on a limited number of patients it can give us an estimated data on Bakre's cyst frequency in RA patients.

AB0197 SONOGRAPHIC ASSESSMENT OF STEROID INJECTION THERAPY

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Background Ultrasonography (US) is an excellent technique to look around and inside joints and tendons in patients with chronic arthritis.¹ Power Doppler imaging combined with conventional grey-scale US could play a role in functional and quantitative assessment of synovitis.^{2,3}

Objectives The aim of this study was to assess sonographic changes induced by steroid injection therapy.

Methods Seven joints of 5 patients with active synovitis were studied. A visual analogue scale (VAS) (ranging from 0 to 10) and a tenderness score (ranging from 0 to 10) were assessed as measures of disease activity. Sonographic evaluation was performed with an AU-5 Harmonic, Esaote Biomedica (Genoa, Italy) equipped with a 13-MHz linear transducer. Power Doppler examination was performed just before the ultrasound guided injection with triamcinolone acetonide. Power Doppler settings were standardised with a pulse repetition frequency of 1000 Hz. Colour gain was initially set at a level just below the disappearance of colour noise deep to cortical bone. Joint cavity widening and power Doppler colour signal were scored from 0 to 4. Ultrasound examination was repeated in the second week after the steroid injection. Statistical evaluation was performed by the Wilcoxon signed-rank test.

Results All the affected joints showed both morphological (joint cavity widening) and functional (colour signal) features of active synovitis. A significant decrease of joint cavity widening ($p = 0.045$), VAS ($p = 0.003$), and tenderness score ($p = 0.0024$) was detected. Power Doppler score did not show a significant change ($p = 0.091$). However, a clearly evident decrease of colour signal was observed in 3 out of 5 patients.

Conclusion Our study confirms the clinical efficacy of steroid injection therapy. Grey-scale US seems to be able to carefully detect morphological changes induced by steroid injection therapy. Although this preliminary report shows that power Doppler score is not significantly changed after steroid injection, we believe that further studies on a larger group of patients are needed to better assess the role of power Doppler US in disease activity monitoring.

REFERENCES

- 1 Gibbon VWW, Wakefield RJ. Ultrasound in inflammatory disease. *Radiol Clin North Am.* 1999;**37**:633-51
- 2 Hau M, Schultz H, Tony HP, Keberle M, Jahns R, Haerten R, Jenett M. Evaluation of pannus and vascularization of the metacarpophalangeal and proximal interphalangeal joints in rheumatoid arthritis by high-resolution ultrasound (multidimensional linear array). *Arthritis Rheum.* 1999;**42**:2303-8
- 3 Newman JS, Laing TJ, McCarthy CJ, Adler RS. Power Doppler sonography of synovitis: assessment of therapeutic response-preliminary observations. *Radiology* 1996;**198**:582-4

AB0198 SYNOVIAL FLUID ANALYSIS ? A RETROSPECTIVE REVISION

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Background Synovial fluid analysis is an extension of the physical examination. In patients with crystal associated arthritis a few drops of synovial fluid often makes a definite diagnosis.

Objectives The authors reviewed of synovial fluid analysis results of their Department.

Methods A revision is made of all the synovial fluids seen under microscopic ordinary light, polarised light and with alizarin red stain, between the 1st. of September 1999 and the 31th of December 2000. The fluids were taken from in and outpatients of the Rheumatology Department of the Egas Moniz Hospital in Lisbon, who had a formal indication for arthrocentesis.

Results A total of 114 synovial fluids were studied, 76 (66.7%) women and 38 (33.3%) men. The mean age was 60.8 ± 16.79 years. The synovial fluid was intra-articular in 76.8% and from adjacent bursal tissues in 23.2%. The mean time between arthrocentesis and microscopic analysis of the fluid was 4.72 ± 7.13 days. The fluid had mechanical properties in 32.5% of the cases; different types of crystals in 27.2%; inflammatory properties in 23.7%; 1.75% were traumatic: 0.88% were infectious; 14% were not classified. Half the patients didn't have a previous diagnosis and the synovial fluid microscopic analysis made a definite diagnosis in 40.4% of these patients: 38.6% of crystal associated arthritis and 1.85% of septic arthritis.

Conclusion The synovial fluid microscopic analysis made a definite diagnosis in 40,4% in patients without a previous one, confirming it is a useful tool in clinical practice.

AB0199 ANTI-TNF MONOCLONAL ANTIBODY USED FOR SCINTIGRAPHIC VISUALISATION OF SYNOVITIS IN RA

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Background Tumour necrosis factor α (TNF α) is a crucial proinflammatory cytokine present in inflamed joints of rheumatoid arthritis (RA) patients. Therapies using anti-TNF α monoclonal antibodies (MAb) have proven their efficacy in RA and other chronic inflammatory diseases. Such antibodies could also be used to detect inflammation.

Objectives To determine the potential of a ^{99}Tc -labelled anti-TNF α MAb to image synovitis in patients with RA.

Methods Eight consenting patients with active RA, defined as a disease activity score (DAS) > 3.2 were enrolled in the study. No previous anti-TNF α therapy was allowed. NSAIDs and low-dose steroids were kept stable during the study. Patients received

a single dose of 300 MBq ^{99}Tc -labelled anti-TNF α MAb and whole body images and spot views were obtained with a double-headed gamma camera.

Results Prominent uptake of the radiolabeled anti-TNF α MAB was clearly visible in inflamed joints of all patients examined. The distribution of the label was compatible with binding to both soluble and membrane-bound TNF α . To elucidate the latter, displacement studies are now in process.

Conclusion Our results show that scintigraphic detection of inflammation with anti-TNF α MAB is feasible. The potential use of this technique to monitor disease activity and response to therapy deserves further investigation.

AB0200 DO ULTRASOUND-GUIDED CORTICOSTEROID INJECTIONS PROVIDE SHORT-TERM RELIEF OF SYMPTOMS IN PATIENTS WAITING TOTAL HIP REPLACEMENT?

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Background Osteoarthritis is the commonest cause of total hip joint replacement. The indication for this procedure is pain and loss of function that has not responded adequately to conservative therapy. Maintaining good muscle strength and optimising weight are important to good outcome post-surgery. This is difficult when symptoms reduce patients' mobility. Corticosteroid injections are commonly used for short-term relief of joint symptoms.

Objectives The primary aim of this pilot study is to determine whether corticosteroid injections improve pain and function in this group, and to identify any baseline features that predict response.

Methods Patients with osteoarthritis or stable rheumatoid arthritis awaiting total hip replacement are invited to take part. Patients with a contraindication to intraarticular corticosteroid or impending replacement (within 3 months) are excluded. Baseline data collected includes the WOMAC index, VAS for pain and stiffness during rest and walking, and SF-36. These outcome measures are repeated at 2, 6 and 12 weeks. Patients have 40 mg triamcinolone with 2 mls of 1% lignocaine via ultrasound-guided injection into the hip. Degree of capsular distension, a possible marker of synovitis, is documented by US. Conventional radiographs of the affected hip are also obtained to assess degree of damage.

Results 6 patients have been recruited to date in this ongoing study. Pain scores and functional changes have improved. Our experience suggests those with capsular distension are more likely to respond.

Conclusion Any reduction in patient symptoms that improves pre-operative pain and mobility should improve patient well-being and could also improve outcome post-surgery. Any predictor of response would allow the application of more accurate risk-benefit assessment for this procedure.

AB0201 CAPILLAROSCOPIC EXAMINATION IN ARTHRITIS PSORIATICA

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Background The capillaroscopic examination gives a possibility to find a correlation between the groups of illnesses and the change of microcirculation based on a non-invasive method. In the publications are mentioned very seldom that decrease of the capillary loops' length and diameter, the twisting of venous side and the decrease of capillaries' density are the fundamental variables in the case of capillaroscopic examination of Arthritis Psoriatica's (AP) patients.

Objectives The study was made on 34 verified AP's patients (20 male, 14 female) selected by the basis of the ARA's criterias in the authors Department of AP Outpatient. Dysqualifying criteria were the metabolic diseases, the cardiovascular diseases and smoking.

Methods The period of psoriasis and arthritis was studied, and the capillary was classified on the basis of morphological criterias (hairpin-shaped, spiral, and bushy appearance) their lengthened and extended forms (arterial and venous side, the length of apical region), the density of capillaries, tearness and continuousness of flow. Leitz's microscope was used for examination (35x magnification, max. 100x). The nailfold was lightened with cold light, further the paraffin oil was used to the surface.

Results It was found that the period of dermatological symptoms are proportional to the number of spiral form of capillaries ($r = 0.371$, $p < 0.05$). The length and width of capillaries were independent from the dermatological and arthritic symptoms ($NS = p > 0.05$). In the case of lengthened frame, the number of bushy forms were less than the others. Then the number of the capillaries loops were decreased ($p < 0.05$).

Conclusion It is accepted in general, that the decrease of the capillaries's numbers as well as the morphological changes -as a typical form of the AP's patients -are in correlation significantly with the period of psoriasis. Disagrees with others previous publications, the authors did not find significant difference in the size of capillary loops comparing to the normal control.

AB0202 THE INCREASING USE OF ULTRASONOGRAPHY TO GUIDE CORTICOSTEROID INJECTIONS

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Background Local corticosteroid injection is a standard treatment for joint and soft tissue inflammation. However, these injections are often inaccurately placed and this can affect clinical outcome. Ultrasonography (US) has the ability to precisely identify local pathology, thereby improving diagnosis and is also able to accurately guide placement of corticosteroid injections. In our unit, a dedicated rheumatology US machine is available in the out-patient department operated by experienced rheumatology research fellows trained in musculoskeletal US.

Objectives To evaluate the number, site and indication for US-guided soft tissue and intra-articular corticosteroid injection compared with the standard 'blind' clinical approach.

Methods Consecutive patients receiving soft tissue and intra-articular corticosteroid injection in the rheumatology out-patient