MATTERS ARISING

Periarticular bone mineral density at the knee joint

Recently, dual energy x-ray absorptiometry (DXA) was presented by Murphy et al. as a new method for assessing periarticular bone mineral density (BMD) at the knee joint. Precision errors for BMD measured at the patella, proximal tibia, and femoral neck were reported by Bohr and Schaadt. Petersen et al. presented subchondral BMD values for a large number of healthy subjects and for patients with various orthopaedic conditions. Bohr and Lund and Petersen et al. examined changes in BMD at the proximal tibia after knee arthroplasty. Petersen et al. examined subchondral BMD after meniscectomy, and Madsen et al. reported data for subchondral BMD measured in several subregions of the proximal tibia in healthy subjects and in subjects with osteoarthritis of the knee. Moreover, Petersen et al. studied relations between bone strength and bone mineral density assessed by DPA and DXA in the proximal tibia. Other related studies could be included. Unfortunately, none of these studies was referred to by Murphy et al.

Author’s reply

We appreciate the interest shown in our work by Dr Marsden. We acknowledge that subchondral bone mineral density has previously been assessed by dual photon absorptiometry. However, we do not feel that this is particularly relevant to our paper. The purpose of our study was to develop and validate a method for measurement of periarticular bone mineral density at the knee joint using the technique now recognised as the gold standard for the assessment of bone mineral density—that is, dual energy x-ray absorptiometry (DXA). With the exception of one study, the studies referred to by Dr Marsden use only dual photon absorptiometry.

As mentioned by Dr Marsden, Petersen et al. measured bone mineral density of small regions of interest within the proximal tibia by DXA and used these measurements to investigate the relationship between trabecular bone strength and bone mineral density in the proximal tibia. However, it is not clear from this paper how many measurements were taken for calculation of precision values as the paper concentrates on the use of, rather than the validation of, this technique. Furthermore, the DXA measurements were performed only on postmortem sections of tibial bone obtained at necropsy. Finally, unlike our study, which showed how to measure bone density of periarticular bone, the regions of interest selected by Marsden et al. did not include the periarticular surface of the tibia, but rather were confined to small areas within the subchondral bone. Thus the areas measured primarily of trabecular bone.

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Can rheumatologists agree on a diagnosis of inflammatory arthritis in an early synovitis clinic?

Irreversible joint damage can occur within months rather than years of the onset of rheumatoid arthritis. It is therefore important that these patients are diagnosed and treated as early as possible. To facilitate the early introduction of effective treatment, a rapid referral system is important. Throughout Europe, a number of centres have developed early synovitis clinics (ESCs) for this purpose.

However, the diagnosis of early inflammatory arthritis (IA) is often difficult and confusing for the primary care doctor. It is suggested that the efficacy of ESCs is impaired by inappropriate referrals. Is this criticism justified? If general practitioners find it difficult to diagnose early IA, what about hospital specialists? In this short study we posed the question “Can rheumatologists agree on a diagnosis of IA in an ESC?”

Patients were recruited from primary care in the greater Belfast area (population ca 400 000). We randomly selected 24 patients who had been referred to an ESC in a Belfast teaching hospital and invited them to attend for outpatient assessment. Informed written consent was obtained from each patient before they took part in the study. Six hospital rheumatologists (two specialist registrars and four consultants) independently assessed 20 patients referred to an ESC by their primary care doctor. Patients were randomly assigned to each rheumatologist, who was asked to judge whether or not the patient currently had any type of IA. Before the study, the assessing rheumatologists had agreed on a definition of IA. Each assessment was conducted in a maximum of 15 minutes, but patients were not informed of their diagnosis until the final consultation, which included an additional 15 minutes to provide time to arrange a management plan for their problems.

1 Murphy E, Bresnihan B, FitzGerald O. Vali-
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eral density at the knee joint by dual energy x-
5 Petersen MM, Olsen C, Lauritzen JB, Lund B. Bone mineral content assessed by dual photon absorptiometry in the proximal tibia: normative data and measurements in ortho-
pedic conditions. European Journal of Experi-
6 Bohr HH, Lund B. Bone mineral density of the proximal tibia following uncemented arthro-

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A mnemonic for SLE diagnostic criteria

Like many rheumatological diseases, sys-
temic lupus erythematosus (SLE) is difficult to diagnose owing to the constellation of findings required. I offer a mnemonic that contains the 11 categories used by the American College of Rheumatology, from which four or more must be present to diagnose SLE: A RASH POINtS MD.

1 Murphy E, Bresnihan B, FitzGerald O. Vali-
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Twenty four patients were invited to participate in the study and 20 consented to take part. Three patients failed to turn up for their outpatient appointment and one patient who did attend declined to take part in the study. There was complete agreement in the assessment of 14/20 patients (70%), 11 (55%) of whom were deemed to have IA (including RA, psoriatic arthritis, and reactive arthritis) and three (15%) who were not. In two cases (10%), only one rheumatologist diagnosed IA. In a further two cases (10%), only two specialists diagnosed IA and in the final two patients (10%), four of the six specialists diagnosed IA. In all cases where there was disagreement, the final assessor shared the majority opinion as to the correct diagnosis. The level of agreement between assessors was calculated using the k statistic, where a value of 1.0 represents total agreement. The overall k value for the six assessors was 0.68. Interestingly, the registrars had a higher level of agreement (k 0.9) than the consultant rheumatologists (k 0.6), though the difference was not statistically significant. These results show that IA can be a difficult diagnosis to make in the setting of an ESC, even among experienced rheumatologists. Nevertheless, the level of agreement in this study compares favourably with that in other specialties such as radiology and ophthalmology.1 Given these findings, it is clearly important to keep an open mind about the diagnosis of IA in its early stages, especially where the clinical findings are equivocal. Careful follow up of such patients should be an important part of the work of any ESC.

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3 Sackett D L, Haynes RB, Guyatt GH. Clinical Epidemiology—a basic science for clinical medicine. London: Little.

Ultrasound guided injection of plantar fasciitis

Kane et al reported four cases of ultrasound guided injection in recalcitrant idiopathic plantar fasciitis.1 We would like to report a different experience using a similar method.

Two patients with a clinical diagnosis of idiopathic plantar fasciitis, unresponsive to an initial palpation guided injection with 10 mg of triamcinolone acetonide, underwent ultrasound examination of the heel. Increased thickness of the plantar fascia near the calcaneal insertion was noted with both plantar fasciae measuring 7.5 mm in depth. Under real time ultrasound guidance, using a medial approach, the tip of a 21 gauge needle was positioned in the centre of the plantar fascia. However, on both occasions, considerable resistance was experienced on attempting to inject triamcinolone and lidocaine mixture into the centre of the plantar fascia. Injection was possible only by withdrawing the needle, under ultrasound guidance, to the edge of the plantar fascia where the injected solution was seen to disperse around the edge of the plantarfascia as shown in figs 1A and B. Both patients responded well to this treatment, being symptom free on review one month later.

Kane et al described injection directly into the substance of the plantar fascia with dispersal of the injection mixture into the substance of the fascia. Our experience suggests that it is difficult to inject into the substance of the fascia. Rather, one may inject at the edge of the plantarfascia with perifascial dispersal of steroid. This still appears to result in satisfactory alleviation of symptoms.

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Figure 1 Ultrasound, transverse sections, showing (A) a thickened plantar fascia and (B) fluid dispersal superficial to the plantar fascia.

HLA-DRB1 and DQB1 genes in anticientromere antibody positive patients with SSc and primary biliary cirrhosis

The frequency of certain HLA class II alleles has been reported to be high in patients with systemic sclerosis (SSc), especially in the clinical subsets defined by SSc related antinuclear antibodies and ethnicity.2 In anticientromere antibody (ACA) positive SSc, a high frequency of HLA-DQB1*0501 has been reported in Europe. This study compares favourably with that in other centres.

Table 1 Gene frequency of selected HLA-DRB1 alleles in anticientromere antibody (ACA) positive patients

DNA alleles

<table>
<thead>
<tr>
<th>Control SSc‡ (%)(n=215)</th>
<th>PBC‡ (%)(n=13)</th>
<th>Healthy control (%)(n=215)</th>
</tr>
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<tbody>
<tr>
<td>DRB1 0101 8 (2/40)* 0 (0/26) 1</td>
<td>8 (2/6) 0 (0/26) 1</td>
<td>5</td>
</tr>
<tr>
<td>0102 13 (3/40) 12 (3/26) 11</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>0401 0 (0/40) 0 (0/26) 1</td>
<td>8</td>
<td></td>
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<tr>
<td>0402 0 (0/40) 4 (1/26) 4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>0403 8 (3/40) 0 (0/26) 1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>0501 20 (8/40)‡ 8 (2/26) 7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>0502 5 (2/40) 0 (0/26) 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0503 0 (0/40) 0 (0/26) 1</td>
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</table>

| DQB1 0301 0 (0/40) 4 (1/26) 13 | 13 |
| 0302 20 (8/40) 12 (3/26) 10 | 10 |
| 0303 18 (3/40) 15 (4/26) 16 | 16 |
| 0401 8 (2/40) 8 (2/26) 11 | 11 |
| 0402 0 (0/40) 4 (1/26) 4 | 4 |
| 0501 20 (8/40)‡ 8 (2/26) 7 | 7 |
| 0502 5 (2/40) 0 (0/26) 2 | 2 |
| 0601 20 (8/40) 35 (9/26) 18 | 18 |

| 0602 8 (3/40) 8 (2/26) 8 | 8 |

*p<0.0005, OR=4.4, fp<0.01, OR=3.7, fp<0.005, OR=3.5.

Difference in alleles was analysed by χ2 test or Fisher’s exact test.

When the association with a particular specificity is not corrected for multiple comparisons, the expected number of alleles tested for each locus (28 in DRB1 and 18 in DQB1).

SSc = systemic sclerosis; PBC = primary biliary cirrhosis.

Seven patients with SSc-PBC overlap were included both in the 20 patients with SSc and the 13 with PBC.
been reported by some investigators. In addition, we found a high frequency of DRB1*0101 in ACA positive Japanese patients with SSc (J Rheumatol, in press).

ACA is also found in patients with primary biliary cirrhosis (PBC), and patients with SSc and ACA commonly overlap PBC or Sjögren’s syndrome (SS), or both. Some studies on HLA class II alleles in Japanese patients with PBC showed high frequencies of DRB1*0803 and DRB1*0501. However, we found no reports which analysed HLA class II alleles in patients with PBC with respect to the relation with ACA or SSc.

To clarify the relation of HLA class II alleles with ACA, SSc, and PBC we carried out molecular genetic analyses of HLA-DQB1 and DRB1 alleles in 86 Japanese patients with SSc or PBC, or both (55 SSc, 24 PBC, and 7 SSc-PBC overlap) who had a genetically and racially homogeneous background. These patients were divided into 26 with ACA and 60 without ACA. All patients with SSc were definite SSc fulfilling the American Rheumatism Association’s preliminary criteria for SSc, and no patient overlapped with systemic lupus erythematosus, polymyositis/dermatomyositis, or rheumatoid arthritis. For accurate comparison of SSc and PBC, we excluded patients with PBC who had some SSc related features (for example, Raynaud’s phenomenon) without satisfying criteria for SSc. The diagnosis of PBC or SS was established based on the criteria. The difference in skin sclerosis or organ involvement in patients with SSc classified by the presence of ACA and DRB1*0803 was not different between ACA positive SSc and ACA negative SSc. ACA positive SSc frequently overapped SS and PBC compared with ACA negative SSc. In ACA negative SSc, DRB1*0803 positive patients frequently overapped SSc compared with DRB1*0803 negative ones, and one of the five patients with DRB1*0803 overlapped PBC. DRB1*0803 may be a candidate allele to determine the susceptibility to SS and PBC in patients with SSc with no relation to the presence of ACA, and the existence of common candidate alleles in SSc and PBC may explain the high frequency of overlap of both the diseases. There was no significant difference in skin sclerosis or organ involvement in patients with SSc classified by the presence of DRB1*0803 (data not shown).

Our report describes the variation of HLA class II alleles among ACA positive patients according to their clinical features; high frequency of HLA-DRB1*0101/DRB1*0501 and DRB1*0803 are restrictively found in SSc and PBC, respectively. Although DRB1*0803 is not related to the production of ACA, this allele may be related to the susceptibility not only to PBC but also to SS in patients with SSc.

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6 Kameda T, Hashimoto M, Matsumoto Y, Kinoshita T, Hisazawa T, Uchida K, et al. Sero-logic and nucleotide sequencing analyses of a novel DR3-associated DRB1 allele with the DRB1*0803 and DRB1*0803 alleles.