Patients who had GCA, other rheumatic disorders like SLE or were newly diagnosed with cancer within 2 years of diagnosis were also excluded. The primary end-point was the remission by one month after commencement of treatment. Remission was defined as the absence of PMR symptoms and the elevation of erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP). For evaluation of the composite outcome of refractory PMR and final diagnosis of RA, the secondary outcome was defined as requirement of additional treatment and/or relapse during the observation period. Relapse was defined as a flare of PMR symptoms and the elevation of ESR or CRP. Categorical variables with a possible relation to the outcomes such as clinical characteristics, criteria items, articular symptoms and laboratory data were compared by using the nonparametric chi-square test.

Results: The mean age of enrolled 61 patients was 70.6 years and 67% were female. 38 (62%) patients failed to achieve remission by one month. The proportion of patients showing elevated ESR (>100 mm/h) at baseline was higher in patients without remission than those with remission (62% vs. 30%, $p=0.017$) though there were no differences in sex, articular symptoms. Patients without remission also showed a lower reduction rate of CRP after a week (76% vs. 89%, $p=0.026$) compared to those with remission. Furthermore, 30 (49%) patients required additional treatments and/or had relapses during the observation period. These patients showed higher platelet counts at baseline (42.9 ± 1.9 vs. $36.3 \pm 2.0 \times 10^4/\text{mm}^3$, $p=0.023$) and lower proportion of achievement of CRP levels less than 1.0 mg/dl after a week (44% vs. 80%, $p=0.009$).

Conclusions: ESR and platelet counts at baseline and early treatment response might be useful for prediction of refractory PMR and/or transition to RA.

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AB1323

DOES OBESITY REPRESENT A RISK FACTOR FOR A POOR REMISSION RATE IN JAPANESE PATIENTS WITH RHEUMATOID ARTHRITIS TREATED WITH ANTI-TUMOUR NECROSIS FACTOR-ALPHA THERAPY?

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Background: Despite increased interest in the association between obesity and rheumatoid arthritis,¹ evidence remains sparse in the Japanese population due to the fact that Asians have different associations between the body mass index (BMI), percentage of body fat, and health risks compared with the Western population. To address this problem, a World Health Organisation (WHO) consultation report proposed appropriate BMI cut-off points for the Asian population and redefined obesity as BMI of ≥ 27.5 kg/m².²

Objectives: From the perspective of exploring the association of obesity and rheumatoid arthritis, it is necessary to precisely define obesity for appropriate ethnic groups. Hence, this study aimed to assess whether obesity represents a risk factor for a poor remission rate in Japanese patients with rheumatoid arthritis requiring anti-tumour necrosis factor-alpha (TNF- α) therapy using appropriate BMI cut-off points for the Asian population.

Methods: Participants were identified from our hospital in Shizuoka, Japan, and followed up from 2009 to 2017. Based on WHO guidelines, we classified participants using an appropriate BMI for the Asian population as follows: underweight, <18.5 kg/m²; normal weight, 18.5 – 23.0 kg/m²; overweight, 23.0 – 27.5 kg/m²; and obese, ≥ 27.5 kg/m². The primary outcome was to define whether obesity affects the clinical response to anti-TNF- α therapy. The response variable was defined as the simplified disease activity index (SDAI) remission after 12 months. In addition, we estimated multivariate odds ratios and their 95% confidence intervals (CIs) for nonremission after 12 months of initiating anti-TNF- α therapy or censored as nonresponders to the therapy after adjusting for sex, age, smoking status, anticyclic citrullinated peptide antibody status, rheumatoid factor status, and disease duration.

Results: We monitored 295 outpatients with rheumatoid arthritis who received anti-TNF- α therapy for at least 12 months or censored as nonresponders to the therapy. The mean $\pm$ SD for SDAI at the baseline was 24.20 ± 14.47 . The BMI was ≥ 27.5 kg/m² (obese) in 16 (4.2%) of 295 patients. At the 12 month follow-up, 62.0% of patients with rheumatoid arthritis had reached SDAI remission. The multivariate odds ratio for nonremission at 12 months or nonresponsiveness of obese patients referred to normal weight was 2.24 (0.53–9.43), which tended to be higher for poor response, albeit not significantly.

Conclusions: Obesity may represent a risk factor for a poor remission rate in Japanese patients with rheumatoid arthritis treated with anti-TNF- α therapy. Thus, weight-loss programs might be a feasible solution for improving the condition of obese Japanese patients with rheumatoid arthritis.

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AB1324

STUDYING THE RELATIONSHIP BETWEEN BODY MASS INDEX, BMI, AND BONE MINERAL DENSITY, BMD, OF LUMBAR VERTEBRAE AND FEMORAL NECK

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Background: There is a well known association between BMI and BMD in as much that patients with higher BMI have higher BMD, secondary to factors including muscle mass and fat mass¹. However it is not clear whether this relationship is equal in all areas of the body assessed for bone mineral density (BMD) estimation, which traditionally are the lumbar vertebrae, and different areas of the femur. Our study sets out to establish if this association exists in the lumbar vertebrae and femoral neck, since Dual Energy X-ray Absorptiometry (DEXA) scans measure BMD of both.

Objectives: To explore the relationship between BMI and BMD in a cohort of patients referred for DEXA scan.

Methods: Data was used from patients referred for DEXA scan to Royal Lancaster Infirmary between (2006 and 2010). The following were recorded: age, sex, height, weight, BMI, BMD at L1-L4, BMD at femoral neck (left and right) and BMD at hip (left and right).

Male and female patients were analysed separately. A Linear regression model was fitted using BMI with BMD at L1, L2, L3, L4, total right hip, total left hip, right neck of femur and left neck of femur as explanatory variables. Adjusted r-squared (r^2) values were used to compare the fit of the models, both with and without age-adjustment.

Results: 35759 patients were used in the study, of which 84% were female. Mean age was 62.2 years (SD 12.8), mean height was 161.9 cm (SD 8.3), mean weight was 70.4 kg (SD 15.3), mean BMI was 26.8 kg/cm² (SD 5.2).

Abstract AB1324 – Table 1 Adjusted r^2 values for each group were as follows:

Site	Adjusted r ² Male	Adjusted r ² Female	Adjusted r ² Male (age-adjusted)	Adjusted r ² Female (age-adjusted)
L1	0.0986	0.0909	0.1002	0.1747
L2	0.0708	0.0678	0.0718	0.1488
L3	0.0581	0.0603	0.0695	0.1127
L4	0.0611	0.0548	0.0921	0.0740
Total Right Hip	0.1480	0.1345	0.1806	0.2983
Total Left Hip	0.1532	0.1518	0.1767	0.3180
Neck of Femur, Right	0.0997	0.0616	0.1768	0.2536
Neck of Femur, Left	0.0898	0.0715	0.1603	0.2695

Conclusions: Our study identifies that there is a positive correlation between increasing BMI and BMD at lumbar vertebrae and at the hips, in both male and female patients. We also identified age as a contributing factor. The relationship between BMI and BMD appears to be more significant in the hip and neck of femur than the lumbar spine. When studying the lumbar spine we found that the association is greater the higher up the lumbar spine, with most positive correlation being in L1 of female patients. This would indicate that using the lower lumbar spine might not be appropriate to assess bone health.

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