Methods: Systematic search strategies were developed for 5 databases (Medline, Embase, PsycInfo, Scopus, Web of Science) to retrieve studies that investigated the relationship between weather conditions and chronic pain. Original articles describing observational studies that related chronic pain (primary outcome) to weather conditions (exposure), were included. Study characteristics, methodology (e.g. measurements of pain and weather, aspects of statistical analysis) and data on risk of bias (validation of participants' exposure and diagnosis, coverage of weather variation, correction for confounders) was extracted. Methodological rigour was summarised by mapping the methodological variability among studies and ranking these from least to most rigorous.
Results: The searches returned 16,081 articles. After removing 3090 duplicates and excluding 12726 articles during title screening, 265 abstracts were assessed for eligibility. Of 64 observational studies that met the inclusion criteria, 30 (47%) investigated pain associated with musculoskeletal conditions, 24 (38%) investigated headache and 10 (16%) investigated pain associated with other conditions such as sickle cell disease and dental pain. After full text assessment, 10 of 30 papers on musculoskeletal conditions were excluded because they investigated risk of acute pain episodes rather than chronic pain symptoms (n=6), or investigated multiple conditions (n=4). The 20 included studies investigated rheumatoid arthritis (6, 30%), osteoarthritis (6, 30%), fibromyalgia (6, 30%) and low back pain (2, 10%). A total of 15 studies (75%) reported some effect of weather on chronic pain, and this was clinically significant (consistent and sufficient size of effect) in 6. Participant numbers varied from 19 to 2491. 1 study was cross-sectional and 19 longitudinal with follow ups ranging from two weeks to 3.5 years, with participants scoring their pain once to daily for 12 months. Pain was measured with a Visual Analog Scale or Numeric Rating Scale in 17 (85%). Weather conditions were retrieved from local weather stations, with most studies assuming that participants stayed in the area/city (65%) or postcode area (20%) where they lived.
In 12 (60%) studies, participants were blinded to the study hypothesis. Methods for correcting for confounders were highly variable, with 7 studies not addressing any, and the remainder addressing one or more of 32 confounding variables.
Conclusions: Methodological variability of studies investigating the relationship between weather and chronic musculoskeletal pain is high. This methodological review will inform best research practice for those investigating the relationship between the weather and chronic pain.
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AB1119 A DESCRIPTIVE STUDY OF GOUT PATIENTS IN A MULTI-ETHNIC SOCIETY

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Background: Gout is a common inflammatory arthritis with rising global prevalence and health burden, especially in the Asia-pacific regions. Ethnicity may play a significant role suggesting lifestyle and/or genetic predisposition, but studies in Asia are limited[1,2].
Objectives: Our study sought to assess the demographic and clinical factors of gout in the multi-ethnic Singapore and describe the burden and treatment pattern in our patients.
Methods: 282 adults with rheumatologist-diagnosed gout were recruited from rheumatology clinics of an academic medical centre in Singapore. Data on demographic and lifestyle features, medical conditions, gout severity and treatment were obtained.
Results: 282 subjects were recruited and 92.6% were men. There were 77% Chinese, 18.8% Malays and 2.5% Indians, compared to Singapore's population makeup (74%, 13% and 9% respectively). Mean age at recruitment was 52.6 years (SD 16.1) while age at gout onset was 42.5 years (SD 16.7). 34.4% received primary or no education; 67.0% were employed and 20.7% retired. 22.7% were current alcohol drinkers while 50.7% were teetotalers. 23.4% were current smokers. Mean body mass index (BMI) was 28.1kg/m^2 (SD 6.0), 26.6% had BMI $\geq$30kg/m^2 while 69.9% had BMI $\geq$25kg/m^2. Prevalence of hypertension was 56.7%, diabetes mellitus 18.8%, dyslipidemia 48.2% and chronic kidney disease (CKD, defined as glomerular filtration rate $<$60ml/min/1.73m^2) 32.4%. Malays had significantly less alcohol intake (1.9%) but higher proportions of diabetes (32.1%), CKD (50.9%) and obesity (54.7%), compared with Chinese subjects (26.3%, 16.1%, 28.6% and 19.8% respectively, all Ps $<$0.05). Gout severity was rated moderate by 30.9% and severe in 50.4%; 69.3% suffered $\geq$3 attacks in 6 months. Mean SU was 477.8μmol/L (SD 130.8). 80.1% were on allopurinol. Subjects (22.3%) who achieved serum urate (SU) $\leq$360μmol/L, when compared to those with SU $>$360μmol/L, were more likely to be on urate lowering therapy (82.5% vs 60.7%, P=0.001), on higher mean allopurinol dose [337 mg/d (SD 166) vs 233 mg/d (SD 140), P$<$0.001] and statin (54.8% vs 33.3%, P=0.003). There were no significant differences amongst ethnicities for SU levels, gout severity and number of attacks.
Conclusions: Gout has substantial health burden in Singapore. Hypertension, dyslipidemia and obesity are more prevalent in our gout subjects compared to our population. Despite notably less alcohol intake compared with other cohorts[3–5], Singapore Malays seemed to suffer higher prevalence and comorbidities of gout. Majority of patients had moderate to severe disease but less than 25% achieved target SU levels highlighting suboptimal management of gout locally.
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AB1120 COMPARISON OF NON-RADIOGRAPHIC SPONDYLOARTHRITIS VERSUS ANKYLOSING SPONDYLITIS PATIENTS UNDERGOING BIOLOGICAL THERAPY

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Background: Axial spondyloarthritis include non-radiographic spondyloarthritis (nr-SpA) and ankylosing spondylitis (AS); they reveal the extent of sacroiliitis assessed by conventional x-ray or MRI (1). The natural history of nr-SpA follows various evolution patterns; smoking, male gender, high levels of inflammatory markers or initial radiographic lesions are among predictor factors of progression to AS (2).
Objectives: The objective of the present study was to compare features related to progression of nr-SpA patients versus AS patients undergoing biological therapy with an anti-TNF agent.
Methods: This was an observational, cross-sectional study including 94 patients with nr-SpA and AS under continuous anti-TNF therapy for at least six months. SPSS 20.0 was used to analyze data with a P value of 0.05.
Results: Out of the selected study group, 69 patients were diagnosed with AS having a mean age of 44.8±10.8, while 25 patients had nr-SpA. Patients with nr-SpA were aged 32.1±6.6 years old and 40% of them were women, a rate significantly than in the AS group (P=0.05). Mean age at disease onset was 30.7 years for the AS subgroup versus only 23.8 years for patients with nr-SpA (P$<$0.001). AS patients presented a significantly higher value of the BMI compared to nr-SpA (27 versus 24.7 kg/m^{2,} P$<$0.001). 91% of patients had positive HLA B27 and 7.4% had a positive family history of SpA, with no significant differences between the two subgroups. A higher level of CRP was noticed in AS patients (P=0.038).In the study cohort the time interval from symptom onset to establishing a diagnosis was of 39.9±55.6 months, with a mean delay interval of 2.32 years for patients with nr-SpA and higher, of 3.5 for patients with AS (P=0.01).
Conclusions: The nr-SpA group had a considerably higher percentage of females compared to the AS subgroup. AS patients presented higher values of CRP at follow-up visits as opposed to nr-SpA patients. There were no significant differences between nr-SpA and AS patients regarding BASDAI or PtGA scores, smoking status or frequency of uveitis. The presence of HLA B27 did not differ between the two subgroups, thus it might not be a reliable predictive factor of progression.
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AB1121 TRABECULAR BONE SCORE COMBINED WITH CLINICAL RISK FACTORS CAN PREDICT INCIDENT FRACTURE IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Fracture is one of the most common and important comorbidities in rheumatoid arthritis (RA) patients, especially patients who use glucocorticoids (GC). However, bone mineral density (BMD) by dual-energy x-ray absorptiometry (DXA) which is the gold standard of diagnosing and monitoring osteoporosis is not a useful tool for predicting new fracture in RA patients. Previous studies suggested the possibility of trabecular bone score (TBS) as a useful predictor for incident fracture.
Objectives: We aimed to evaluate the accuracy of TBS combined with clinical risk factors or BMD for prediction of new fracture in patients with RA.
Methods: A total of 100 female RA patients were enrolled with assessment of TBS, BMD, and clinical risk factors for fracture. During follow-up period, we

calculated the incident rate of all fractures. After dividing the patients according to the use of GCs, we compared baseline characteristics and fracture-free survival between two groups. We compared accuracies of TBS, BMD, clinical risk factors for fracture and their combinations for predicting new fractures using areas under the receiver operator characteristic (ROC) curve (AUC).

Results: A total of 14 fractures in 12 patients were occurred among 100 patients during follow-up (428.8 person-years): 9 among the 44 in GC users and 5 in 56 GC non-users. Incidence of fracture was not different between two groups (log-rank test, p=0.27). AUC for incident fracture prediction of TBS alone [AUC 0.54, 95% confidence interval (CI) 0.35–0.72] was comparable with TBS combined with L-spine BMD (AUC 0.54, 95% CI 0.36–0.71) or with hip BMD (AUC 0.55, 95% CI 0.37–0.73). Accuracy for prediction of new fracture is increased when TBS was combined with age and history of previous fracture (AUC 0.74, 95% CI 0.62–0.85). In GC users, history of previous fracture alone (AUC 0.79, 95% CI 0.62–0.97) showed the best accuracy for predicting new fracture among TBS, BMD, clinical risk factors for fracture and their combinations.

Conclusions: TBS combined with age and previous history of fracture showed the highest accuracy for predicting new fracture compared to TBS or BMD alone or their combinations in RA patients. In GC users, history of previous fracture alone showed the highest accuracy for predicting new fracture.

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AB1122 ALL-CAUSE OF HOSPITAL MORTALITY IN PATIENTS WITH RHEUMATOID ARTHRITIS AND LUPUS ERYTHEMATOSUS IN A UNIVERSITY HOSPITAL DURING 1998 TO 2014

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Background: All-cause and cause-specific mortality is increased in patients with systemic lupus erythematosus (SLE) and Rheumatoid Arthritis (RA) when compared to the general population. Mortality can be attributed to the disease per se, side effects of drugs and effect of comorbidities. The survival of patients has improved over the past years when compared to historical controls

Objectives: The objective is to describe all-case of mortality in patients with SLE and RA in a university hospital.

Methods: This is an observational, descriptive, and cross-sectional study. We included all patients with SLE and RA hospitalized during 1998 to 2014. The cause of death was obtained from medical records and classified according to International Classification of Diseases (ICD)-10. We made a descriptive analysis of all-cause of mortality of both diseases.

Results: We analyzed 1,330 medical records, of which 215 died in hospital. The respiratory insufficiency was the most common mortality diagnosis in both diseases (RA 29%, SLE 24.1%), followed by sepsis (RA 25%, SLE 20.4%). The all-cause of mortality of SLE and RA are shown in Table 1. Of the 467 RA hospital admissions, the 5.1% died, and of the 863 SLE hospital admissions, the 22.1% died.

Table 1. Mortality of RA and SLE

Year	RA		SLE	
	Hospital admissions, n=467	Deaths, n=24	Hospital admissions, n=863	Deaths, n=191
1998–99	18 (3.9)	3 (25)	57 (6.6)	12 (47.4)
2000	22 (4.7)	0 (0)	21 (2.4)	4 (19)
2001	14 (3)	0 (0)	36 (4.2)	5 (13.9)
2002	17 (3.6)	0 (0)	22 (2.5)	2 (9.1)
2003	26 (5.6)	0 (0)	65 (7.5)	22 (33.8)
2004	33 (7.1)	1 (3.03)	40 (4.6)	9 (22.5)
2005	28 (6)	1 (3.57)	64 (7.4)	32 (50)
2006	27 (5.8)	0 (0)	39 (4.5)	7 (17.9)
2007	34 (7.3)	0 (0)	33 (3.8)	9 (27.3)
2008	40 (8.6)	2 (5)	49 (5.6)	19 (38.8)
2009	28 (6)	0 (0)	53 (6.1)	8 (15.1)
2010	24 (5.1)	7 (29.17)	60 (7)	10 (16.7)
2011	27 (5.8)	0 (0)	51 (5.9)	9 (17.6)
2012	31 (6.6)	2 (6.45)	80 (9.3)	9 (11.3)
2013	41 (8.8)	6 (14.63)	88 (10.2)	15 (17)
2014	40 (8.6)	2 (5)	66 (7.6)	16 (24.2)
2015	17 (3.6)	0 (0)	39 (4.5)	3 (7.7)

RA: Rheumatoid arthritis, SLE: Systemic Lupus Erythematosus.

Conclusions: Advances in the diagnosis and treatment of SLE and RA, have decreased the morbidity and mortality of the two diseases. Infectious and cardiovascular pathologies were the most frequent causes of death.

Disclosure of Interest: None declared

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AB1123 POOR ASSESSMENT OF RISK OF OSTEOPOROSIS AFTER A FOREARM FRACTURE IN WOMEN: A HEALTH INSURANCE DATABASE STUDY IN THE LOIRE VALLEY REGION (FRANCE)

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Background: Bone Mineral density (BMD) assessment is a useful tool to evaluate bone fragility and is largely recommended in patients at risk of osteoporosis. We have previously reported in 250 women aged 50 year-old or more that only ≈10% of them had a BMD after a forearm fracture (1).

Objectives: Herein, we evaluated BMD assessment and prescription of anti-osteoporotic drugs after a forearm fracture in women after 50 year-old in a large population database.

Methods: We identified all forearm fractures in women aged 50 years old or more in the "Centre-Val de Loire, France" area between 01/01/2011 and 31/12/2012, using the National Health Insurance database which cover both private and public sectors of the whole population. We analyzed the reimbursement and determinants of BMD assessment such as age, consumption of drugs inducing osteoporosis, anti-osteoporotics drugs and long term illnesses.

Results: We identified 4120 women with a forearm fracture during the study period. Among them, 546 (13.25%) had a BMD assessment performed at a median time of 4 months after the fracture. Women who had had a BMD were significantly yonger than those who had not (67.44 years versus 74.63 years: OR=0.941 CI95% (0.932–0.949)). Anti-aromatase treatment was positively associated with BMD assessment (OR=3.233 (CI95%: 1.976–5.290)) while corticosteroid were not (OR=0.866 (CI95%: 0.601–1.247)). Among the women who had a BMD assessment, 168/546 (30.77%) had an anti-osteoporotic drug initiated after the forearm fracture, versus 231/3574 (6.46%) in those who had no BMD performed ($p<0.05$).

Conclusions: In this large population, less than 15 percent of women over 50 year-old have a BMD assessment after a forearm fracture. BMD assessment was associated with anti-osteoporotic drugs initiation.

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Disclosure of Interest: None declared

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AB1124 EFFECT OF SARCOPENIA, SUBCUTANEOUS ADIPOSE TISSUE AND ABDOMINAL VISCERAL FAT ON MORTALITY RISK OF COMMUNITY-DWELLING OLDER ADULTS: A POPULATION-BASED PROSPECTIVE COHORT STUDY IN BRAZIL

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Background: Body composition changes resulting from ageing (decreased muscle mass and increased fat tissue) are frequently not accompanied by concomitant changes in body mass index (BMI). Thus, BMI has low accuracy to estimate death risk attributed to changes in body composition in the older adults[1]. Currently, the best method for body composition analysis in routine clinical practice is dual energy X-ray absorptiometry (DXA)[2]. However, the few studies on body composition by DXA and mortality risk in elderly have some limitations, such as analysis not compartmentalized (subcutaneous and visceral tissues) of body fat and appendicular muscle mass not adjusted for fat mass[3].

Objectives: We sought to investigate the association between body composition by DXA (including visceral fat measurement) and mortality in a longitudinal, prospective, population-based cohort of elderly subjects.

Methods: 839 community-dwelling subjects (516 women, 323 men), ≥65 years, were assessed by questionnaire on clinical data, laboratory exams and body composition by DXA using Hologic QDR 4500A equipment. DXA APEX software computes visceral adipose tissue (VAT) by subtracting the subcutaneous adipose tissue (SAT) from the total android fat. All analyses were performed at baseline. Total body fat was expressed by fat mass index (FMI) [(total body fat (kg)/height^2 (m)]. Sarcopenia was defined as low appendicular muscle mass adjusted for fat. Mortality was recorded during 4 year-follow-up. Multivariate logistic regression was used to compute odds ratios for all-cause and cardiovascular mortality.