Methods: We extracted population-based longitudinally linked administrative health data for patients 16 years or older with a first diagnostic code of 711.xx (ICD9-CM) and M00.xx (ICD10-AM) in WA in the period 1990-2010. Annual incidence rates (IR), risk factors during 14.5 years lookback and outcomes including standardized mortality rates (SMR) during 10.1 years follow-up are reported.

Results: A total of 2,777 patients (67% male, mean age 49.8 ± 20.5) received a first diagnostic code for PyA. The AIR increased from 4.5 to 11.8 /100,000 over time as did age at onset (45.1 to 55.4 years) and proportion of female patients (23 to 36%). There was no seasonal variation in PyA incidence but a higher rate of predisposing comorbidities in female patients. Knees (33.6%) and hands (22%) were most frequently affected with 28.4 % of positive cultures not due to Gr+ cocci. Mean hospital stay was 8 days, 30-day readmittance and mortality rate was 12.8% and 3.1% respectively. During ten years follow-up serious infections (43%), new diagnosis of osteoarthritis (20%), joint replacement (10.8%), osteomyelitis (6%), and crystal arthropathy (6.3%) were the most common morbidities. SMR were increased across all age and gender categories (Table) but highest in females aged 16-40 (SMR 25.9).

Table 1. Mortality rates (MR) per 1000 person years in patients with pyogenic arthritis compared with age (at death) and gender matched categories from the general population by standardised mortality rate (SMR)

Gender	Age	Deaths	Person years	MR PyA	MR Gen pop *	SMR
Male	16-40	27	4015	6.72	0.892	7.53
	40-59	80	7106	11.25	2.972	3.78
	>60	331	7366	44.93	21.55	2.08
	All	438	18487	23.69	5.820	4.07
Female	16-40	11	1026	10.72	0.41	25.95
	40-59	40	2769	14.44	1.75	8.21
	>60	208	4088	50.88	24.20	2.10
	All	259	7883	32.85	5.50	5.96

* Based on WA death data from Australian Bureau of statistics in 2011

Conclusion: The incidence of PyA has increased significantly between 1990 and 2010 in WA. PyA associates with a 3% in-hospital mortality rate and significant late bone and joint morbidity including osteomyelitis. PyA associated with excess mortality across age and gender categories, most markedly in younger female patients.

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OP0096

EXPOSURE TO DENGUE INFECTION DO NOT RAISE RISK OF RHEUMATOID ARTHRITIS: FINDINGS FROM THE MALAYSIAN EPIDEMIOLOGICAL INVESTIGATION OF RHEUMATOID ARTHRITIS (MYEIRA) CASE-CONTROL STUDY

L. K. Tan^{1,2}, C. L. Too^{1,10}, A. F. Nurul-Ain¹, A. A. Siti-Aisyah¹, S. Wahinuddin², A. Osman², I. S. Lau³, H. Hussein⁴, N. S. Shahril⁴, S. C. Gun⁵, E. Mageswaren⁴, M. S. Mohamed Said⁶, A. Mohd. Mokhtar⁷, R. Azmillah³, M. Othman⁸, L. Alfredsson⁹, L. Klareskog¹⁰, M. Shahnaz¹¹, L. Padyukov¹⁰. ¹Allergy and Immunology Research Center, Institute for Medical Research, Ministry of Health Malaysia, Selangor, Malaysia; ²Faculty of Medicine, Universiti Kuala Lumpur Royal College of Medicine Perak, Perak, Malaysia; ³Department of Medicine, Selayang Hospital, Selangor, Malaysia; ⁴Department of Medicine, Putrajaya Hospital, Putrajaya, Malaysia; ⁵Department of Medicine, Tuan Ku Ja'afar Hospital, Negeri Sembilan, Malaysia; ⁶Faculty of Medicine, University Kebangsaan Malaysia Medical Center, Kuala Lumpur, Malaysia; ⁷Department of Medicine, Tengku Ampuan Afzan Hospital, Pahang, Malaysia; ⁸Department of Medicine, Raja Permaisuri Bainun Hospital, Perak, Malaysia; ⁹Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Malaysia; ¹⁰Department of Medicine, Rheumatology Unit, Karolinska Institutet and Karolinska University Hospital, Stockholm, Sweden; ¹¹Ministry of Health Malaysia, Federal Government Administrative Center, Putrajaya, Malaysia

Background: Dengue infection is associated with joints pain mimicking disease onset symptom of rheumatoid arthritis (RA). However, there is lack of epidemiological studies on exposure to dengue infection and risk of future RA.

Objectives: We investigated the relationship between exposure to dengue infection and risk of developing different subsets of RA, defined by the presence

of anti-citrullinated peptide antibody (ACPA) in the multi-ethnic Malaysian population.

Methods: Serum samples from 1,235 RA cases (i.e. 516 Malay, 254 Chinese, 405 Indians and 60 others/mixed-ethnicity) and 1,624 epidemiological matched population-based controls (i.e. 1,023 Malay, 208 Chinese, 297 Indians and 96 others/mixed-ethnicity) were assayed for presence of dengue IgG antibody using World Health Organization recommended ELISA kits. Positive results of dengue IgG antibodies indicates previous exposure to dengue infection(s). We performed chi-square and Mann-Whitney U analysis to determine the association of ever-exposed dengue infection with ACPA-positive/ACPA-negative RA and to investigate the antibody frequency and levels among the studied populations.

Results: We observed high occurrence of dengue IgG antibody in the overall RA cases (79.7%) and matched controls (77.3%), with no significant differences detected between the ACPA subsets of RA. Ethnicity stratification analysis revealed a decrease risk of developing ACPA-positive RA in the Indian patients with positive dengue IgG antibody (OR=0.59, 95% CI=0.37-0.94, p=0.03), and in particular patients with elevated level of dengue IgG antibody (OR=0.44, 95% CI=0.25-0.78, p<0.05). On the other hand, the significant decrease mean levels of dengue IgG antibody were observed in the ACPA-positive RA subset for all three major ethnic groups (i.e. Malay, p<0.0001, Chinese, p<0.01 and Indian<0.05) (Figure 1). No association was observed between presence of dengue IgG antibody and ACPA-negative RA subset.

Figure 1. Comparison of mean dengue IgG antibody level between ever-exposed dengue infection RA cases, stratified by ACPA status. Comparison of median dengue IgG antibody level between the ever-exposed dengue infection ACPA-positive RA and normal controls in the four ethnic groups. The red line indicates the mean level of dengue IgG antibody level

Conclusion: Our findings demonstrated that exposure to dengue infection do not increase the risk of developing future RA in the multi-ethnic Malaysian population. The inverse associations observed in the Indian ethnic group are in line with the other studies investigating exposure to viral infection and risk of RA.

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OP0097

LISTERIA MONOCYTOGENES. DESCRIPTION AND ANALYSIS OF CASES IN AN IMMUNODEPRESSED POPULATION BY RHEUMATIC DISEASES

M. Lisbona Muñoz¹, P. León¹, G. Lopez Antequera¹, E. Rubio-Romero¹. ¹H.U. Virgen del Rocío, Rheumatology, Seville, Spain

Background: *Listeria monocytogenes* is a gram-positive bacteria that cause the invasive disease listeriosis. Human clinical syndromes are infrequent, mostly appearing in immunosuppressed individuals, newborns, the elderly, pregnant women, and occasionally healthy patients.

Objectives: We describe and analyze *Listeria*-related demographics and clinical features to determine the predisposing conditions for severe infections in an immunodepressed population by rheumatic diseases.

Methods: Descriptive Observational Study. A retrospective analysis of 143 patients were performed affected by listeriosis, with positive isolation of *Listeria monocytogenes* from blood, treated in the H.U. Virgen del Rocío (Seville- Spain) between 2003-2019. Of them 9 were rheumatic patients. The type of clinical manifestation was analyzed, paying special attention to the characteristics associated with patients with neurological complications or unfavorable outcome (death and / or abortion in pregnant women), immunosuppression (associated with cancer or rheumatic disease) was assessed as independent variables, chronic diseases (Hypertension, Diabetes Mellitus, dyslipidemia, COPD, Renal Insufficiency and Ischemic Heart Disease) as well as other baseline characteristics of the patient. (age, sex, pregnancy) and their toxic habits (tobacco and alcohol).

Results: The sample includes a similar proportion of men (70 cases) and women (73 cases), of all ages. Of the total patients, most (85%) required hospital admission, with a duration median (non-parametric data) of 11 days. 78% of the cases admitted showed a favorable evolution. However, 15.4% resulted in death and 5.6% in abortion. This percentage of abortions represented 29% of the total pregnant women admitted. Of all the patients admitted, a third (33%) were immunocompromised, including patients with cancer (79%) and rheumatic diseases (21%). Include lupus (33%), RA (22%), APs (11%), polymyalgia rheumatica (11%), panuveitis (11%) and ANCA vasculitis MPO specificity (11%). All of them required admission although the majority showed a favorable evolution, except one of the patient, which resulted in death, in which case in addition to lupus he presented with prostate cancer. Regarding the baseline treatment of these patients, 7 underwent treatment with synthetic DMARDs and three with biological DMARDs (1 Adalimumab, 1 Infliximab and 1 Rituximab). As a result of the *Listeria* infection, most of them had fever or digestive symptoms and two of them experienced neurological manifestations (meningoencephalitis). None of these last two (with lupus and RA) had biological DMARDs.

Conclusion: Listeriosis is an uncommon but potentially serious infection usually in older people, pregnant women and immunocompromised patients. In our sample, 33% of the patients were immunocompromised. Of the 9 patients affected by *Listeria* with rheumatic disease we find a death for meningoencephalitis. Given the impact of this infection in immunosuppressed patients should pay attention in our patients with fever and neurological manifestations.

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Rheumatoid arthritis - comorbidity and clinical aspects - I

OP0098

POLYPHARMACY IS ASSOCIATED WITH A POORER TREATMENT RESPONSE AND INCREASED RISK OF ADVERSE EVENTS IN EARLY RHEUMATOID ARTHRITIS

S. Benamar¹, C. Lukas², C. Daien², C. Gaujoux-Viala³, L. Gossec⁴, A. C. Rat⁵, B. Combe², J. Morel³. ¹CHU Montpellier, Rheumatology, Montpellier, France; ²University Hospital of Montpellier, Rheumatology, Montpellier, France; ³University Hospital of Nîmes, Rheumatology, Nîmes, France; ⁴La Pitié-Salpêtrière Hospital, Rheumatology, Paris, France; ⁵CHU Caen, Rheumatology, Caen, France

Background: Polypharmacy is steadily increasing in patients with rheumatoid arthritis (RA). They may interfere with treatment response and the occurrence of serious adverse events. Medications taken by a patient may reflect active comorbidities, whereas comorbidity indices usually used include past or current diseases.

Objectives: To evaluate whether polypharmacy is associated with treatment response and adverse events in an early RA cohort and to establish whether polypharmacy could represent a substitute of comorbidities.

Methods: We used data from the French cohort ESPOIR, including 813 patients with early onset arthritis. Patients included in the current study had to start their first disease modifying anti-rheumatic drug (DMARD) within 24 months of inclusion in the cohort. Disease activity data were collected at one, five and ten years from the initiation of the first DMARD. For each patient, treatments were collected at baseline and at five years. Medications count included all specialties other than background RA therapy,

analgesics/NSAIDs and topicals. Polypharmacy was defined as a categorical variable based on the median and tertiles of distribution in the cohort. Treatment response was assessed by achieving DAS28 ESR remission (REM) at 1 year, 5 years and 10 years from the initiation of the first DMARD. The occurrence of severe adverse events (SAE) was measured by the occurrence of severe infection, hospitalization, or death during the 10-year follow-up. The association between patient's characteristics and achievement of REM and occurrence of SAE were tested in univariate analysis. A logistic regression model was used to evaluate associations between polypharmacy and REM at 1 year, 5 years and 10 years (we used baseline polypharmacy for the 1-year analysis and five years polypharmacy for the 5- and 10-years analyses). Multivariate adjustment was made for age, sex, BMI, duration of disease, initial DAS28 ESR, initial HAQ, smoking status, rheumatic disease comorbidity index (RDCI).

Results: The proportion of patients who achieved REM one year after the initiation of the first DMARD was 32.1% in the polypharmacy according to the median group (patients taken ≥ 2 medication) versus 67.9% in the non-polypharmacy group ($p=0.07$). At 5 years after the first DMARD, the proportion of patients with REM was 45.0% in the polypharmacy group versus 56.3% in the non-polypharmacy group ($p=0.03$). At 10 years the proportion of patients with REM was 32.5% in the polypharmacy group versus 67.5% ($p=0.06$). Patients who take greater or equal to 2 medications had a 40% lower probability of achieving REM (OR = 0.60 [0.38-0.94] $p = 0.03$) at 5 years from the first DMARD (if RDCI index was not included in the model). At 10 years, patients receiving multiple medications had a 43% lower probability of achieving REM (OR = 0.57 [0.34-0.94] $p = 0.02$). SAE incidence was 61 per 1000 patient-years. For patients who developed SAE all causes 71.4% where in the polypharmacy group versus 57.8% were in the non-polypharmacy group ($p = 0.03$; univariate analysis). These results are no longer significant after adjustment for comorbidities indices.

Conclusion: In this early RA cohort, polypharmacy is associated with a poorer treatment response and increased risk of adverse events. Polypharmacy may represent a good substitute of comorbidities for epidemiological studies.

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OP0099

EPIDEMIOLOGY AND MORTALITY OF RA-ASSOCIATED INTERSTITIAL LUNG DISEASE: DATA FROM A FRENCH ADMINISTRATIVE HEALTHCARE DATABASE

P.A. Juge¹, L. Wemeau Stervinou², S. Ottaviani³, G. Desjeux⁴, J. Zhuo⁵, B. Bregman⁶, V. Vannier-Moreau⁷, R. M. Flipo⁸, B. Crestani⁹, P. Dieudé³. ¹Université de Paris, AP-HP, Hôpital Bichat Claude-Bernard, Department of Rheumatology, Paris, France; ²CHU Lille, Department of Pulmonology, Lille, France; ³Assistance Publique-Hôpitaux de Paris, Hôpital Bichat-Claude-Bernard,