of diseases [1]. Recently, non-specific NVC abnormalities have been described in a cohort of COVID-19 patients (no controls used) [2].

Objectives: To assess microvascular damage in recovered COVID-19 patients (range of 40-270 days from recovery) by considering the previous severity of the disease, and, as mandatory, the comparison with matched individuals suffering from primary Raynaud's phenomenon (PRP) and healthy volunteers (HV).

Methods: NVC investigations were performed during standard clinical assessments in forty-four recovered COVID-19 patients (mean age 58±14 years, mean days from disease onset 129±54, mean days from disease recovery 106±52), twenty-two patients with PRP (mean age 60±15 years, mean years from disease onset 11±10) and twenty-two HV (mean age 60±14 years). COVID-19 patients were divided into two subgroups, according to the need of oxygen supplementation: twenty-two patients with severe lung involvement (need of Continuous Positive Airways Pressure and/or mechanical ventilation, mean age 57±12 years) vs twenty-two patients with mild-moderate lung involvement (need of Venturi mask or no need of oxygen supplementation, mean age 59±15 years). Clinical and demographic data of all the enrolled subjects were collected, during NVC examination. The following capillaroscopic parameters were evaluated: capillary number, dilated capillaries, giant capillaries, microhemorrhages, angiogenesis, disorganization of the microvascular array. A validated semiquantitative scoring (0-3) was adopted for NVC abnormalities [3-5]. Statistical analysis was carried out by non-parametric tests.

Results: After COVID-19 recovery, no statistically significant difference was observed between COVID-19 patients and control groups of subjects concerning the score for the following NVC parameters: dilated capillaries, giant capillaries, disorganization of the microvascular array, angiogenesis. However, the capillary number per linear millimeter was significantly lower in COVID-19 patients (8.3±0.9) than in PRP (8.8±0.7, $p=0.05$) and HV (9.3±0.6, $p<0.0001$). Surprisingly, recovered COVID-19 patients showed significantly less microhemorrhages (score 0.4±0.3) than subjects of the other groups (PRP 0.6±0.5, $p=0.01$; HV 0.6±0.6, $p=0.05$). In particular, recovered patients who had more severe COVID-19 showed less microhemorrhages than patients with mild/moderate disease (score 0.18±0.4 vs 0.36±0.5), but this didn't reach the statistical significance ($p=0.18$). On the other hand, patients recovered from severe SARS-CoV-2 infection also showed higher rate of angiogenesis (0.18±0.4) than patients with mild/moderate disease (no case, $p=0.04$).

Conclusion: COVID-19 doesn't seem to significantly induce, in short-term, specific alterations in peripheral microvascular array as evaluated by NVC, despite the severity of the disease, except for a significant reduction of the absolute number of naifold capillaries. The topic needs longer time of evaluation and larger number of COVID-19 recovered cases to also assess the role of concomitant therapies.

REFERENCES:

- [1] Ingegnoli F et al. *Curr Rheumatol Rev*. 2018;14:5-11.
- [2] Natalello G et al. *Microvasc Res*. 2020;133:104071.
- [3] Smith V et al. *Autoimmun Rev*. 2020;19:102458.
- [4] Cutolo M et al. *Clin Rheumatol*. 2019;38:2293-2297.
- [5] Sulli A et al. *Ann Rheum Dis*. 2008;67:885-7.

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AB0680 SARCOPENIA RATE IN COVID-19 SURVIVORS

D. Levy¹, M. Giannini^{1,2}, W. Oulehri³, M. Riou¹, C. Marcot⁴, A. Meyer^{1,2,5}, B. Geny^{1,2}. ¹Hôpitaux Universitaires de Strasbourg, Physiology, Strasbourg, France; ²Université de Strasbourg, Fédération de Médecine Translationnelle de Strasbourg (FMTS), Faculté de Médecine, EA 3072 « Mitochondrie, Stress oxydant et Protection Musculaire », Strasbourg, France; ³Hôpitaux Universitaires de Strasbourg, Service de Réanimation Chirurgicale, Strasbourg, France; ⁴Hôpitaux Universitaires de Strasbourg, Service de Pneumologie, Strasbourg, France; ⁵Hôpitaux Universitaires de Strasbourg, Service de Rhumatologie, Strasbourg, France

Background: COVID-19 survivors may have high risks of developing sarcopenia, which is associated to handicap, poor quality of life, higher healthcare costs, increased risk of falls, increased mortality (1).

Objectives: To assess sarcopenia rate (which has not been described yet) following COVID-19 hospitalization and to highlights features associated with sarcopenic vs. non-sarcopenic patients.

Methods: Major confirmed COVID-19 patients undergoing intensive care unit (ICU) or Pneumology Department admission in Strasbourg University Hospital between March and June 2020 were prospectively included. Muscle and cardio-respiratory evaluations were performed 3 months after discharge. Sarcopenic patients were compared to non-sarcopenic ones. A second muscle assessment 6 months after discharge was performed in patients with pathologic muscle tests.

Results: 127 patients were included, 39 (30.7%) not requiring ICU care, 88 (69.3%) requiring ICU care. The cohort consisted of 71% male patients, with a median age of 63 years [28-82]. Forty-one-percent were obese (BMI>30kg/m²). Most individuals had preexisting comorbidities (82 patients, 70%), mainly hypertension and diabetes mellitus. The median total hospital stay duration was 22 days and up to 89 days. At the 3 months assessment, 17/127 (13%) patients were diagnosed

with sarcopenia which comprised 6/17 (35%) severe sarcopenia (4.7% of the total cohort). At the 6 months assessment, only 4/15 (27%) of the initial sarcopenic patients remained sarcopenic (3% of the total cohort) and 3 of these 4 patients had severe sarcopenia. BMI (26,3 vs. 29,3, $p=0.03$), COPD (20% vs. 3%, $p=0.03$), comorbidities (93% vs. 67%, $p=0.04$), total hospital stay duration (33 vs. 20 days, $p=0.03$) and ICU stay duration (33 vs. 13 days, $p=0.01$) were significantly associated with sarcopenic vs. no sarcopenic patients. However, there was no significant difference concerning cardio-pulmonary evaluations between these two groups.

Conclusion: We here highlighted a sarcopenia prevalence at 3 and 6 months following a hospitalization for COVID-19 of 13% and 3% respectively, occurring mainly in patients with comorbidities. Sarcopenia was not associated to worse cardio-pulmonary results in comparison with non-sarcopenic patients.

REFERENCES:

- [1] Di Filippo L, De Lorenzo R, D'Amico M, Sofia V, Roveri L, Mele R, et al. COVID-19 is associated with clinically significant weight loss and risk of malnutrition, independent of hospitalisation: A post-hoc analysis of a prospective cohort study. *Clinical Nutrition* [Internet]. oct 2020. <https://linkinghub.elsevier.com/retrieve/pii/S0261561420305896>

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AB0681 HOW COMMON IS COVID-19 IN CHILDREN, YOUNG PEOPLE AND ADULTS WITH RHEUMATIC DISEASES? RESULTS FROM THE INTERNATIONAL COVID-19 EUROPEAN PATIENT REGISTRY

S. Shoop-Worrall^{1,2}, S. Verstappen^{2,3}, W. Costello^{4,5}, S. Angevare^{4,6}, Y. Uziel^{7,8}, C. Wouters^{9,10}, N. Wulfraat¹¹, R. Beesley^{4,12}. ¹The University of Manchester, Centre for Health Informatics, Manchester, United Kingdom; ²The University of Manchester, Centre for Epidemiology Versus Arthritis, Manchester, United Kingdom; ³Manchester University NHS FT, Manchester Academic Health Science Centre, NIHR Manchester BRC, Manchester, United Kingdom; ⁴ENCA, European Network for Children with Arthritis, Geneva, Switzerland; ⁵iCAN Ireland, iCAN Ireland, Bansha, Ireland; ⁶KAISZ, KAISZ, Amsterdam, Netherlands; ⁷Meir Medical Center, Pediatric Rheumatology Unit, Kefar Sava, Israel; ⁸Sackler School of Medicine, Department of Pediatrics, Tel Aviv, Israel; ⁹University Hospitals Leuven, Pediatric Rheumatology Division, Leuven, Belgium; ¹⁰KU Leuven University, Department of Microbiology and Immunology, Leuven, Belgium; ¹¹Wilhelmina Children's Hospital (WKZ), Department of Pediatric Rheumatology, Utrecht, Netherlands; ¹²Juvenile Arthritis Research, Juvenile Arthritis Research, Tonbridge, United Kingdom

Background: People with rheumatic diseases may be at increased risk of contracting COVID-19 due to their rheumatic disease or immunosuppressive treatments. It is currently unclear what the COVID-19 disease burden is for these people and whether any of their personal or disease characteristics are associated with contracting COVID-19.

Objectives: To explore the proportion of, and characteristics associated with, contracting COVID-19 in children and young people (CYP) with rheumatic diseases and adults with rheumatic diseases from March 2020 to December 2020 during the COVID-19 pandemic.

Methods: CYP and adults recruited to the international COVID-19 European Patient Registry, a parent-led, online, self-referred prospective cohort recruiting participants from around the globe, were included in current study if enrolled between 20th March 2020 and 30th December 2020. Demographic information was collected at enrolment and rheumatic disease, diagnoses of COVID-19 and lifestyle factors were collected at weekly intervals.

The proportion of CYP and adults diagnosed with COVID-19 were assessed separately. Associations between contraction of COVID-19 at any point over follow-up and participant demographics, rheumatic disease and lifestyle factors at enrolment were assessed descriptively and via Mann-Whitney U-tests, Chi-squared tests and Fisher's exact tests.

Results: Within 642 CYP and 3646 adults, the majority were female (67%, 89%) and most commonly from the UK (43%, 82%), respectively. The most frequent diagnoses were polyarticular JIA (37%) in the CYP cohort and RA in the adults (63%). Comorbidities were common (45%, 61%) and the majority were taking one or more immunosuppressive therapies (88%, 92%), respectively. At the time of enrolment, 51% and 54% were practising social distancing, respectively. In both cohorts ~3% contracted COVID-19 at some point during follow-up (n=18 (2.8%) in CYP and n=103 (2.8%) in the adult cohort).

In CYP, those who contracted COVID-19 were older (no COVID, median: 10, IQR: 7, 13, vs COVID, median: 14, IQR: 12, 16, $p<0.001$) and less often had oligoarticular JIA (no COVID: 31%, COVID: 22%) or polyarticular JIA (No COVID: 38%, COVID: 11%). Systemic JIA (no COVID: 7%, COVID: 11%) and enthesitis-related JIA (no COVID: 5%, COVID: 22%) were more common in those who contracted COVID. No other differences between those with and without COVID-19 were observed with respect to country of residence ($p=0.335$), gender ($p=0.624$), control of rheumatic disease ($p=0.459$), comorbidities ($p=0.752$), immunosuppressive medication ($p=0.713$) or social distancing ($p=0.729$).

In the adult cohort, those contracting COVID-19 were more commonly from Russia (no COVID: 2%, COVID: 14%) and less commonly from the UK (no COVID: 82%, COVID: 71%, $p<0.001$). There was greater female representation in those that contracted COVID-19 (no COVID: 88%, COVID: 93%, $p=0.022$). Although there were no differences in overall presence of comorbidity ($p=0.923$), kidney disease was overrepresented in those that had contracted COVID-19 (no COVID: 2%, COVID: 8%, $p<0.001$). Finally, there were lower levels of social distancing in those who contracted COVID (no COVID: 54%, COVID: 44%, $p=0.047$). There were no significant differences in age ($p=0.203$), BMI ($p=0.617$), smoking status ($p=0.120$), rheumatic disease ($p=0.181$) and its control ($p=0.218$) or immunosuppressive use ($p=0.208$) between those who did and did not contract COVID-19 in the adult cohort.

Conclusion: A low proportion of CYP and adults with rheumatic diseases contracted COVID-19 in the 9 months since March 2020. However, given the self-reported nature of the survey and limited testing available across many countries, this study may underestimate the true burden of COVID-19 in the rheumatic disease community. Factors associated with COVID-19 differ between CYP and adults, with age and type of rheumatic disease associated in CYP and gender, kidney comorbidity and social distancing associated in adults.

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AB0682 RHEUMATOLOGY TEACHING IN TIMES OF COVID-19

Y. Chang¹, J. Nicholls¹ on behalf of Medical Education team of George Eliot Hospital NHS Trust. ¹George Eliot Hospital NHS Trust, Medical Education, Nuneaton, United Kingdom

Background: The COVID-19 pandemic has affected the delivery of face-to-face teaching especially bedside teaching for medical students in the hospitals. Rheumatology outpatient clinics have mostly become virtual or telephone consultation clinics which prevent medical students from seeing patients in person. Students are deprived of the opportunities to take rheumatology history, examining patients and seeing signs of rheumatologic diseases. New adaptations have to be made to ensure equitability and that students still receive the relevant teaching in line with their learning curriculum and to help them prepare for their examinations.

Objectives: Our aims are:

- 1) To adapt bedside teaching in the wards to simulated teaching in the classroom using trained simulated 'patients'; and
- 2) To create simulation teaching of patient journeys in Objective Structured Clinical Examination (OSCE) format known as Clinically Observed Medical Education Tutorials (COMET) (Nair et al., 2001).

Methods: 1) For simulated teaching in the classroom, we have trained our teaching colleagues as simulated or standardized patients (SPs). We write up fictitious patient histories which simulate common presentations at rheumatology clinics. We train the SPs to give as accurate a history as possible and to simulate pains in different joints (e.g. pain at the metacarpophalangeal joints and proximal interphalangeal joints in rheumatoid arthritis) on clinical examinations. For clinical presentations that are not easily simulated, we use photographs of the relevant signs. This method is used not only as formative assessments but also as end-of-placement summative assessments.

2) COMET comprises 3 OSCE-style stations with a tutor each where the students perform different tasks based on a patient's clinical problem (e.g. acute hot swollen joint). The first station is initial A-to-E assessment of the patient (using a simulator), followed by investigations and interpretations of lab results and imaging (station 2) and lastly, management (including prescribing medications) and communication skills (e.g. explain arthrocentesis to the patient).

Results: The overall feedback from students is very positive. We use Likert scale to assess confidence level before and after the teaching session, and pre-session and post-session multiple choice questions to assess learning and knowledge gained.

Conclusion: While simulated teaching cannot replace encounters with real patients, students do enjoy these sessions as they get to 'experience' a large variety of rheumatologic cases and practice their clinical skills which at times are limited with real patients due to reluctance and pain of the patients.

REFERENCES:

- [1] Nair, R., Morrissey, J., Carasco, D., Desilva, S. & Patel, V. (2001) COMET: Clinically Observed Medical Education Tutorial - a novel educational method in clinical skills. *International Journal of Clinical Skills*

- [2] Van der Vleuten, C.P.M. & Swanson, D.B. (1990) Assessment of clinical skills with standardized patients: state of the art. *Teach Learn Med*, 2: 58-76.

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AB0683 OSTEOPATHRITIS PAIN AND COVID-19 PANDEMIC: THE LOCKDOWN IMPACT

E. Orsini¹, O. De Lucia¹, F. Ingegneri¹, G. Cincinelli¹, G. Armentaro¹, R. Di Taranto¹, R. Caporali¹. ¹Istituto Ortopedico Gaetano Pini, Rheumatology, Milano, Italy

Background: Both peripheral and central nervous system processes are involved in osteoarthritis (OA) pain. Several aspects such as environmental, psychological and constitutional factors contribute to OA pain and they were enhanced during and after lockdown, for COVID-19 pandemic.

Objectives: The purpose of this study is to assess the impact of the modified lifestyle forced by lockdown on joint pain using Visual Analogic Scale (VAS) scale. the variation of VAS pain, the reduction of physical activity, the variation of body weight, the stress values defined by Perceived Stress Scale (PSS) and the use of anxiolytics and antidepressant drugs were measured in OA patients during the lockdown period.

Methods: 74 adult patients affected by primary or secondary OA were included. The median age was 69.8 years old and 55/74 (74%) of the patients were female. Sex, age, comorbidities, pharmacological therapy, variation rate of VAS pain referred to OA symptoms (0-100) during lockdown, weight variation, degree of physical activity (defined as: absent 0h, low 1-5h, moderate 6-10h, high > 10h) were recorded. Perceived stress using PSS was recorded and patients were divided into two classes: low (0-13) or moderate-high (14-40) stress scale. This observational retrospective real-life study was conducted in May 2020. A linear regression model was used to analyze the different patients groups separately. Overall variables were expressed on analogic scales. To assess the impact on VAS pain, regression models were estimated with VAS pain as dependent variable, and weight increase, physical activity and perceived stress as independent variable.

Results: Patients enrolled with a pre lockdown VAS pain < 40 were 30, whereas 44 patients referred a pre lockdown VAS pain > 40. Patients taking anxiolytics, antidepressant, anxiolytics or antidepressant drugs were 14/74 (19%), 7/74 (9%), 19/74 (26%) respectively. PSS score Low (score 0-13), Med (score 14-26), High (score 27-40) was recorded in 34/74 (46%), 36/74 (49%), 4/74 (5%) patients respectively. Patients were divided in two different groups on the basis of baseline pre lockdown VAS pain: low VAS pain (< 40) (n=30) and moderate-high (≥ 40) (n=44). In the low-VAS group there was an average increase of pain by 1.36 points, an average increase of weight by 0.63kg, and an average decrease of weekly physical activity by 6.4 hours that was statistically relevant ($p<0.0001$). In moderate-high VAS group an average increase of pain and weight, by 2.62 points and 0.35 kg respectively, and a significant decrease of physical activity by 3.15 h weekly ($p<0.0001$) has been recorded

	MODERATE PAIN (VAS<40) (n=30)		HIGH PAIN (VAS≥40) (n=44)	
	Before LD	During LD	Before LD	During LD
Gender, Female: n (%)	17 (56.7%)		38 (86.4%)	
Age (years) : median (Q1, Q3)	63 (57,73)		73 (66, 79)	
Weight (Kg) : median (Q1, Q3)	66.5 (57.0,76.5)	67.5 (58.0, 77.7)	64.0 (57.7, 74.2)	67.0 (57.7, 75.0)
Physical activity (h/week) : n (%)	0 (0.0%) 4 (13.3%) 1-5 (46.7%) 6-10 12 >10 (40.0%)	11 (36.7%) 10 (33.3%) 6 (20.0%) 3 (10.0%)	10 (22.7%) 10 (22.7%) 18 (41.0%) 6 (13.6%)	26 (59.0%) 12 (27.3%) 5 (11.4%) 1 (2.3%)
Perceived Stress:n (%)		13 (43.3%) 15 (50.0%) 2 (6.7%)		21 (47.7%) 21 (47.7%) 2 (4.5%)
VAS PAIN (score) : mean (sd)	18.7 (10.4)	28.7 (22.1)	54.1 (10.0)	56.2 (16.3)