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**Objective:** Glucocorticoids remain a cornerstone of guideline-based management of persistent asthma and allergic rhinosinusitis [1–4]. Glucocorticoid-induced osteoporosis (GIO) is the most common iatrogenic cause of secondary osteoporosis and an issue of concern for physicians treating patients with inhaled or oral glucocorticoids either continuously or intermittently. The aim of this study is to investigate the BMD in a group of patients with allergic rhinosinusitis.

**Methods:** 13 adult patients with a diagnosis of allergic rhinosinusitis and a history of at least 20 years of intranasal corticosteroids treatment were included in this study. Nasal endoscopy, skin prick tests, and nasal cytology were evaluated in all subjects. The BMD of the patients was measured by DXA.

**Results:** According to the T-scores, 4 patients were measured to have < 2.5 SD T-score, considered as osteoporosis.

**Conclusion:** This study shows that prolonged intranasal corticosteroids treatment in patients with allergic rhinosinusitis may induce osteoporosis [5–11].

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#### P559

##### MONITORING BISPHOSPHONATE TREATMENT IN PRIMARY CARE: PINP AND OSTEOPOROSIS IN SHEFFIELD EVALUATION (POSE STUDY)

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**Objective:** To evaluate whether Sheffield PINP monitoring algorithm (1) is associated with better treatment persistence, BMD increase, reduced fracture risk and is cost-effective compared to standard care.

**Methods:** Inclusion criteria were referral from Sheffield GPs, BMD scans performed between 2012–2013 and report advising initiation of oral bisphosphonate and monitoring. 906 patients were recruited and retrospectively divided into Group A (intention to monitor, with baseline PINP, n=588) and Group B (no intention to monitor, without baseline PINP, n=318). The model described by Davis et al (2) was used to extrapolate life-time costs and quality-adjusted life-years (QALYs).

**Results:** No differences were found in baseline characteristics between groups (age, gender, BMI, BMD and major risk factors for fractures). More patients in Group A started oral treatment (77.4% vs. 49.1%; p<0.001), but there were no differences in the presence of gap in treatment >3 months and in treatment duration. More patients in Group A had follow-up DXA scan at 4–6 y from baseline (46.9% vs. 29.2%; p<0.000) and higher change of total hip BMD (+2.74% vs. +0.42%; p=0.003).

Fewer new fractures occurred in Group A but this was not statistically significant. Patients in Group A were more likely to change management (p=0.005) including switching to zoledronate (p=0.03). The increased prescribing in Group A resulted in increases in both costs (£30.19) and QALYs (0.0039) relative to the no intention to monitor strategy, giving an incremental cost effectiveness ratio (ICER) of £7,660 in the probabilistic sensitivity analysis.

**Conclusion:** Patients monitored with PINP are more likely to start oral treatment, switch to zoledronate, have follow-up DXA scans and a greater increase of hip BMD. PINP monitoring has the potential to be cost-effective in a UK NHS setting given that interventions with an ICER under £20,000 are generally considered to be cost-effective in a UK context (3).

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**Acknowledgment:** The project was funded by Roche Diagnostics

#### P560

##### LATIN AMERICAN CONSENSUS ON THE MANAGEMENT OF GLUCOCORTICOID INDUCED OSTEOPOROSIS: A PRELIMINARY COMMUNICATION

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Glucocorticoid (GC) induced osteoporosis (GCIOP) is the most frequent form of secondary osteoporosis in clinical daily practice. GC therapy is frequently indicated to treat autoimmune and chronic inflammatory diseases. Two of the most devastating untoward effects are bone loss and fractures. Doses as low as 2.5 mg of prednisone for more than 3 months can impair bone integrity. Population at risk is defined based on the dose and duration of GC therapy and should be stratified according to FRAX, major osteoporotic fracture, prior fracture and bone density values (BMD). General measures include to prescribe the lowest dose of GC to control the underlying disease for the shortest possible time, maintain adequate Vitamin D levels and calcium intake, maintain mobility and prescribe a bone acting agent in patients at high risk of fracture. These agents include oral and IV bisphosphonates, denosumab and teriparatide. The aim of this consensus is to update the management of GCIOP according to the reality of clinical practice in Latin American countries.

**Methods:** To develop this position paper a multidisciplinary panel of experts including methodologists and key experts in the use of chronic glucocorticoids including a patient or patient advocate, will define the scope of the consensus; this will follow with a systematic literature search to find all relevant papers including guidelines and systematic reviews. A set of consensus statements will be derived from the literature review including the grading recommendation and an adaptation to the local context in Latin America when needed.

A questionnaire with a list of statements will be sent by mail to a larger group of physicians of diverse specialties known to prescribe

glucocorticoids (rheumatologists, endocrinologists, primary care physicians, dermatologists among others) for a Delphi process aggregating and anonymizing feedback.

Responses to the statements will be collected and analyzed, items may be dropped or added for subsequent rounds. Cronbach's  $\alpha$  will be used as a measure of internal consistency and the inter-rater agreement between participants in each round will be evaluated using intraclass correlation coefficient with 95% confidence intervals. Manuscript will be drafted and will be available for comments to all members of the group before submission and publication.

#### P561

##### PRIMARY DISABILITY DUE TO MUSCULOSKELETAL DISEASES IN THE IRKUTSK REGION (EAST SIBERIA, RUSSIAN FEDERATION)

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**Objective:** Patients with diseases of the musculoskeletal system and connective tissue have an increased prevalence and disability. This study aimed to examine primary disability due to musculoskeletal diseases in the Irkutsk region (East Siberia, Russian Federation) in 2010–2020.

**Methods:** The method of solid data base for persons recognized as disabled for the first time for 2010–2020 in Irkutsk region due to musculoskeletal diseases. Level calculated at 10,000 of the adult population, structure - in percentage.

**Results:** Primary disability due musculoskeletal diseases in the Irkutsk region is higher than in the Russian Federation. There is a decrease of percent of primary disability from 11.7% in 2010 to 6.0% (2018), 6.1% (2019) and to 7.6% (2020) and in its level in adults from 10.4 in 2010 to 5.9 in 2015 and to 4.4 to 10 thousand of population. The first place (45.5% - 40.5%) in the structure of primary disability in adults takes osteoarthritis, in the working-age population - dorsopathies (45.9% - 29.1% in 2020). In the persons of retirement age osteoarthritis takes the first place (from 75.1% to 61.3%). In the working-age population it occupies the second place (from 31.6% - 38.2% to 29.1% in 2020). In the third place, as in people of working age, and at retirement age, is rheumatoid arthritis (10–12%).

**Conclusion:** The level of primary disability is higher in urban residents and women. Reducing the level of disability due musculoskeletal diseases was reached by both the greater availability of high quality and high tech medical care for patients (operative treatment, early mobilization and rehabilitation), as well as changes in regulatory documents on disability criteria.

#### P562

##### ECHOCARDIOGRAPHIC ASSESSMENT OF LEFT HEART FUNCTION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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**Objective:** Assessment of the essential echocardiographic parameters of left heart chambers in rheumatoid arthritis (RA).

**Methods:** Patients with RA and symptoms arised at least 3 months before were included in the study. The exclusion criteria were presence of symptomatic coronary heart disease, arterial hypertension, or diabetes mellitus.

**Results:** All the included persons (n=24) were women. Their age was 49.6±7.9 y, and disease duration was from 0.5–12.0 y. DAS28-CRP(4) index was 5.0±0.6. All the patients were treated with basic antirheumatic drugs as well as NSAIDs therapy; in 25% of cases glucocorticoids were also applied. Weight excess according to their BMI was found in 16.7% of patients, but neither high blood glucose concentrations nor low GFR were revealed. Mean total cholesterol was 5.59±0.92 mmol/l. No low ejection fractions were registered in patients studied. Mean interventricular septum (IVS) thickness was 8.9±1.0 mm whereas 25.0% patients had high IVS thickness (>10 mm). Mean left ventricle (LV) myocardial mass index was 90.42±23.85 g/m<sup>2</sup>, with patients had its mild (25.0%), moderate (8.3%) or pronounced (8.3%) increase. Mean LV posterior wall thickness was 0.92±0.12 cm, and 41.6% patients had it 11 mm or more. Mild LV diastolic dysfunction was also revealed in all the cases (decreased mean average E/A ratio, 0.87±0.24). In 92% of individuals, Grade 1 mitral or tricuspid regurgitation have been found in 92% patients, 8.3% had grade 2 tricuspid regurgitation, and 42% ultrasound manifestations of aortic atherosclerosis.

**Conclusion:** There are certain morphological and functional changes of heart in RA even in absence of arterial hypertension, or any other primary heart disease. Most common type of echocardiographic changes includes concentric LV hypertrophy with diastolic dysfunction, mild valvular dysfunction without ventricle dilation, and aortic atherosclerosis.

#### P563

##### TUMOR-INDUCED OSTEOMALACIA: DIAGNOSTIC AND REHABILITATION CHALLENGES

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**Objective:** Tumor-induced osteomalacia (TIO) is a rare paraneoplastic syndrome, which is characterized by renal phosphate wasting and disordered bone mineralization. Due to a non-specific symptoms, small size and slow growth of the tumor, it can take far more than several years to make a correct diagnosis since the appearance of the first symptoms, which may lead to irreversible consequences despite successful treatment. We present a case of the patient with TIO and secondary hyperparathyroidism (SHPT) caused by hungry bone syndrome. **Case report:** A 65-y woman had 12-y history of severe lower back pain, decrease in height by 16 cm during life, multiple atraumatic fractures of the ribs and pelvic bones. The patient moved around using a wheelchair, but initiation of therapy with alfacalcidol 3 mcg/d, cholecalciferol 15 000 IU/week, calcium 1000 mg/d in 2014 improved her condition and she began to move independently. However pain syndrome is contained exclusively by narcotic analgesics (tramadol 200 mg/d). Tumor was localized in 2018 using somatostatin receptor scintigraphy with 99mTc-Tektrotyd in the left inguinal region, which was resected (pathology - mesenchymal tumor, FGF23+). After tumor removal SHPT was observed during 2 following years despite medical treatment with alfacalcidol 3 mcg, cholecalciferol 15000 IU/week and calcium 2000 mg/d, which corresponded to hungry bone syndrome. Normalization of SHPT was achieved only after 2 y of treatment. The BMD increase was significant and continued throughout the 3 years after surgery: +127.7% at hip, +23.4% - lumbar spine, +3.2% - radius. Despite the normalization of the biochemical parameters and increase in BMD, patient's quality of life continues to be significantly reduced. The patient has to use cane and walk for short distances because of multiple bone fractures and severe pain syndrome. **Conclusion:** Our clinical case illustrates that despite the successful results of surgical removal of the tumor, a long course of rehabilitation may be required. Severe pain syndrome due to multiple fractures, hungry bone syndrome and secondary hyperparathyroidism is a challenge in the treatment of these patients. Early diagnosis and initiation of the therapy can reduce the number of complications and improve quality of life parameters.