midnight cortisol, urinary free cortisol or ACTH levels). However, there was a strong inverse correlation between the difference of TL in active disease compared to controls and triglyceride level for all lymphocyte subtypes (range r = -0.74 to -0.86, range p = .003 to p = .022), suggesting that the higher the triglyceride levels, the shorter the TL in patients with CS. Additionally, inverse correlation was observed for weight and BMI SDS and B-cell TL, specifically (r = -0.76, p = .019 and r = -0.76, p = .018, respectively). Furthermore, there appeared to be an implication for shorter TL in the patients with dyslipidemia compared to those without (mean TL difference from controls: -1.1 Kb in patients with dyslipidemia vs 0.53 Kb in those without, p = .067). We conclude that although TL in active CS does not seem to differ from controls, B-cell and NK-cell TLs are affected after cure, and this may be related to acute changes that occur in the immune system peri- and post-operatively. Interestingly, the level of TL shortening correlates strongly with several complications of CS, including weight, BMI and dyslipidemia. This suggests that TL may be used as a surrogate prognostic marker of hypercortisolism-related complications.

Bone and Mineral Metabolism
OSTEOPOROSIS: DIAGNOSIS AND CLINICAL ASPECTS
Deterioration of Bone Microarchitecture in Prediabetes Is Partly Mediated Through Fibroblast Growth Factor 21
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SUN-372
Introduction: Prediabetes has been reported to be associated with a worse trabecular bone score (TBS). Fibroblast growth factor 21 (FGF21) levels are raised in prediabetes and other insulin-resistant states, and FGF21 has been reported to be implicated in bone metabolism. We compared the bone mineral density (BMD) and TBS between prediabetes and normoglycemia, and studied the correlation of FGF21 with BMD and TBS. Method: Chinese postmenopausal women aged between 55 and 80 and without type 2 diabetes were recruited from the Hong Kong Cardiovascular Risk Factor Prevalence Study between November 2016 and October 2018. Participants were excluded if they were already on anti-osteoporosis therapy, and had secondary causes of osteoporosis, had body mass index (BMI) <15 or >37 kg/m² (when TBS measurement may not be accurate), or had an estimated glomerular filtration rate (eGFR) <30mL/min. They were divided into prediabetes (defined by fasting glucose ≥5.6mmol/L or HbA1c ≥5.7%) and normoglycemia. BMD and TBS were measured by dual-energy X-ray absorptiometry. Serum FGF21 levels were measured with an in-house ELISA kit. Results: 258 participants were included (130 prediabetes and 128 normoglycemia), with a mean age of 61.5±5.1 years and mean BMI of 24.2±3.7kg/m². BMD over lumbar spine, femoral neck and total hip were all comparable between prediabetes and normoglycaemia, while TBS was lower in prediabetes (1.27±0.07 vs 1.30±0.07, p=0.007), which remained significant after adjustment for age and BMI. Serum FGF21 levels did not correlate with BMD but inversely correlated with TBS. On multiple linear regression models, serum FGF21 levels showed an independent inverse correlation with TBS (standardized beta -0.13, p=0.031), which remained significant with the inclusion of homeostasis model assessment of insulin resistance (HOMA-IR) in the model. Conclusion: Among Chinese postmenopausal women, bone quality was worse in prediabetes despite comparable bone density. Serum FGF21 levels showed a significant independent correlation with TBS, suggesting the potential impact of FGF21 on the deterioration of the bone microarchitecture in prediabetes.

Tumor Biology
TUMOR BIOLOGY: DIAGNOSTICS, THERAPIES, ENDOCRINE NEOPLASIAS, AND HORMONE DEPENDENT TUMORS
Regional Hyperthermia Enhances Selective Mesenchymal Stem Cell Migration Towards the Tumor Stroma
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SUN-120
The tumor homing characteristics of mesenchymal stem cells (MSCs) make them attractive vehicles for the tumor-specific delivery of therapeutic agents, such as the sodium iodide symporter (NIS). NIS is a theranostic protein that allows non-invasive monitoring of the in vivo biodistribution of functional NIS expression by radioiodine imaging as well as the therapeutic application of ¹³¹I. To enhance the actively recruitment of MSCs to growing tumor stroma and thereby trigger targeted delivery of the NIS gene to the tumor, we examined the combination with regional hyperthermia, as heat induces the secretion of immunomodulatory chemokines, cytokines and growth factors, well-known attractants of MSCs. Human hepatocellular carcinoma cells (HuH7) were heat-treated in a water bath at 41 °C for 1h, followed by incubation at 37 °C for 4-48h. mRNA and protein levels of chemokines involved in MSC migration was analyzed by RT-PCR and ELISA. Chemotaxis of MSCs in relation to a gradient of supernatants was tested in a 3D live cell tracking migration assay. In a subcutaneous HuH7 mouse xenograft tumor model, a single systemic injection of CMV-NIS-MSCs was applied 6h, 24h, 48h after or 24h, 48h before hyperthermia treatment and tumoral ¹²³I accumulation was assessed by ¹²³I-scintigraphy. Ex vivo NIS analysis of tumor sections was performed by RT-PCR and
Adrenal
ADRENAL - TUMORS
Adrenal Incidentalomas: Prevalence and Referral Patterns in a UK University Hospital Using Real-Life Data
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SAT-174
The estimated prevalence of adrenal incidentaloma at abdominal CT scan is 0.5-2\% (1). However, from clinical practice, we noticed that incidentalomas are referred from other imaging modalities (eg MRI) and of other sites (eg thorax, spine). We therefore explored the relationship between prevalence rates and (i) imaging modality and (ii) its change over time, in a real world clinical setting from a large UK teaching hospital/trauma centre. We also examined the referral pattern of potential lesions to endocrinology. We extracted data from all radiology reports for all CT and MRI scans from Jan 2018-Oct 2019. We utilised a key phrase search strategy (eg adrenal adenoma/lesion/ mass/module/incidentaloma, incidental adrenal, indeterminate adrenal). Where possible we excluded false hits (eg no adrenal lesion). These were linked to the referral patterns as identified by a referral logged or an attendance (new or follow-up) to endocrine clinic 3 months post index scan. Preliminary data showed that, from a total of 12787 scans performed, 2604 potential lesions were reported (prevalence 2.0\%), comprising 2496/88838 (2.8\%) CT scans and 108/39040 (0.3\%) MRI scans. The number of scans/month increased in 2019 vs 2018 (6.9\% for CT and 12.6\% for MRI). Only 9.0\% and 15.7\% of reported potential lesions detected by CT and MRI, respectively, were referred for endocrine review. Hence, MRI patients were more likely to be referred than those with CT scans (p=0.018). Referral rates were lower in 2019 than 2018 (8.6\% vs 14.4\%; p less than 0.001). This approach has its limitations but allows efficiently review of large cohorts. Adrenal incidentalomas pose a rising challenge in view of increasing reliance on scanning. Despite a dedicated adrenal multidisciplinary team with a national track record in improving management of incidentalomas (2), the referral rate of potential lesions is worryingly low and not improving, with >90\% of cases overlooked. This work is part of on-going innovation to enhance the pick-up rate for these cases whilst addressing the increased endocrine workload in a cost-effective manner. 1. Barzon L, Sonino N, Fallo F, Palu G, Boscaro M. Prevalence and natural history of adrenal incidentalomas. Eur J Endocrinol. 2003;149:273-285. 2. Hanna FWF, Isaq BG, Lea SC, George C, Golash A, Finn M, Ogunmekan S, Maddox E, Sim J, Xyropoulos G, Fordham R, Fryer AA. Adrenal lesions found incidentally: how to improve clinical and cost-effectiveness. BMJ Open Quality. 2019;In press.