Conclusions: The mechanisms of damage to the heart and blood vessels in patients with CKD begin to function already in the initial stage of renal failure and increase as it progresses. The need to know the data of clinical, laboratory and instrumental examination methods at the terminal stage of CKD is dictated, first of all, by the possibility of exposure to them. An important stimulus for conducting an echocardiographic examination is the early detection and correction of cardiovascular disorders, in connection with the prospect of increasing the survival of patients after kidney transplantation.

SUN-094

A RANDOMISED CROSS-OVER TRIAL OF THE EFFECTS OF CALCIUM CARBONATE AND SEVELAMER PHOSPHATE BINDERS ON CALCIPROTEIN PARTICLES IN PREVALENT HAEMODIALYSIS PATIENTS

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Introduction: There is emerging evidence that calciprotein particles (CPP), nanoscale complexes of calcium phosphate and mineral-binding proteins, may mediate the toxic effects of phosphate excess in CKD. The uraemic environment favours the accumulation of CPP in the blood and transformation of the mineral they carry from the amorphous (CPP1) to crystalline (CPP2) state. Theoretically, oral phosphate binders (PB) may abrogate some of the harmful effects associated with hyperphosphataemia by reducing gastrointestinal phosphate absorption and lowering systemic CPP formation. However, the effects of PB on circulating CPP have yet to be tested in humans, and the potentially divergent effects of calcium-containing and non-calcium containing PB types are unknown. We hypothesised that the non-calcium-containing PB sevelamer (SEV) would achieve greater reductions in serum CPP than equivalent doses of calcium carbonate (CC).

Methods: Prevalent haemodialysis (HD) patients receiving thrice weekly treatments were recruited into a single-centre prospective randomised cross-over study of CC and SEV (n=37). Participants were randomised to either i) 36 weeks of calcium carbonate, (CC), or ii) 12 weeks of CC, followed by 24 weeks of sevelamer therapy ('SEV). Samples were collected at entry to the study (V1), after 1 week of washout (V2), 12 weeks of CC (V3), 12 weeks of either CC or SEV (V4) and finally a further 12 weeks of the same PB (V5). The primary endpoint was the between-group difference in the change CPP levels from V2 to V5 reflecting the effect of switching PB from CC to SEV compared to continuing CC therapy. Serum total CPP, CPP1, CPP2 quantitation were performed using the fluorescent probe-based flow cytometry technique previously published by our group. The distribution of CPP counts was skewed and log-transformed before analysis. Within-group differences were performed using linear mixed-effects models with Tukey's post-hoc test for multiple comparisons. Between-group differences were analysed with unpaired t tests.

Results: 25 participants completed the study, with 9 in CC and 16 in SEV groups, respectively. There were no significant differences in baseline demographics or co-morbidities between the groups. In the SEV group, total CPP, CPP1, CPP 2 levels remained relatively stable over time. However, within the CC group, mixed effects analysis showed that total CPP rose between V2 to V5 (mean increase 188%, P=0.013, 95%CI [40%, 301%]), predominantly driven by changes in CPP1, which increased from V2 to V4 (mean increase 112%, P=0.036, 95%CI [50%, 174%]) and remained significant at V5 (V2 vs. V5, P=0.022). In between-group comparisons, CPP1 levels were higher in the CC group than SEV group at V5 (p=0.049), but not at other time points. Differences in total CPP and CPP2 did not attain significance at any timepoint. The change in total CPP from V2 to V5 was higher in the CC group compared to the SEV group (P=0.037).

Conclusions: Although limited by its small sample size, this 36 week randomised trial revealed increasing levels CPP1 in patients on CC but not in those receiving the non-calcium-containing PB sevelamer. The clinical significance of these findings warrants further consideration.

SUN-095

INTERNATIONAL VARIATION IN CLINIC HEMOGLOBIN TARGETS AND ACHIEVED HEMOGLOBIN LEVELS IN ADVANCED CKD: RESULTS FROM THE CKD OUTCOMES AND PRACTICE PATTERNS STUDY (CKDOPPS)

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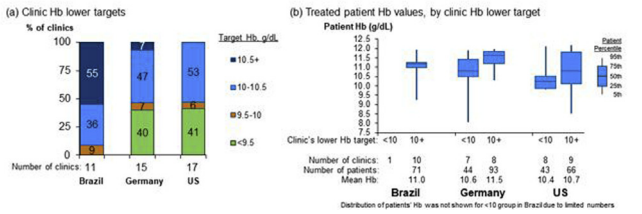
Introduction: Uncertainties regarding the ideal target for hemoglobin (Hb) and difficulties in the management in chronic kidney disease (CKD) patients may lead to variations in anemia practice patterns. Using data from CKDOPPS clinics in Brazil (BR), Germany (GE), and the United States (US) (2013-2018), we describe clinic-level targets for Hb and their associations with achieved Hb levels in patients with advanced CKD receiving anemia treatment.

Methods: CKDOPPS is an international prospective cohort study of stage 3-5 non-dialysis CKD patients from national samples of nephrology clinics. Patients with eGFR <30ml/min/1.73m^2 at study enrollment were included in this analysis. Clinic-level Hb upper and lower targets were collected from nephrologist surveys and averaged if multiple nephrologists in a clinic responded to the survey. Baseline anemia treatment status of individual patients was defined based on their use of either erythropoietin stimulating agents, intravenous or oral iron IV. We collected data within +/- 3 months from study enrollment, and observed values of Hb obtained using the average of available measurements within 3-15 months after the enrolment in patients treated for anemia.

Results: A total of 44 clinics reported Hb targets: BR (12), GE (15), US (17). We observed variations in the lower limits of Hb targets across countries: 91% of Brazilian facilities established 10+ g/dL as the lower cutoff, whereas around 40% of facilities in the US and Germany had <9.5g/dL. Upper limits were typically established at 12g/dL across all facilities (Figure: a). The mean Hb in clinics with 10+ lower Hb targets were 10.7, 11 and 11.5 g/dL in the US, Brazil and Germany, respectively. Patients from clinics reporting higher Hb lower-limits (Hb>10g/dL) had higher Hb levels in response to anemia treatment across countries (Figure: b).



Conclusions: We observed variation in lower limits of Hb targets across CKDOPPS clinics. Since patients treated in facilities across countries with higher Hb lower-limit targets displayed higher Hb levels, target Hb appeared to be positively associated with anemia control.

SUN-096

EFFECTS OF AN SGLT2 INHIBITOR ON SALT SENSITIVITY OF BLOOD PRESSURE AND SYMPATHETIC NERVE ACTIVITY IN NON-DIABETIC CKD RATS

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Introduction: Investigations were carried out to examine the effects of an SGLT2 inhibitor on salt-sensitivity of blood pressure (BP), its circadian rhythm, and sympathetic nerve activity (SNA) in non-diabetic CKD rats.