

that KTRs have a similar ambulatory BP profile compared to CKD patients without kidney replacement therapy.

POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME: DIVERSE ETIOLOGIES

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Objective: Posterior Reversible Encephalopathy, called PRES, is a clinico-radiological entity individualized for the first time in 1996 as a special form of hypertensive encephalopathy.

Design and method: We collected retrospectively 8 cases of PRES Syndrome either on-specific or followed in Internal Medicine service. All patients had a confirmed diagnosis by brain MRI.

Results: There were 5 women and 3 men, mean age was 30 years (range 16–66 years). Three patients had a past history of arterial hypertension. Two patients had moderate chronic renal failure, three had a chronic renal failure on hemodialysis, one had normal renal function and the two others were transplanted. Hypertension with diastolic blood pressure greater than 120 mmHg was noted in two patients. For the others, it was an acute and sudden increase of blood pressure usually well balanced. Neurological manifestations are on-specific, such as confusion, a prolonged critical post coma or seizure initially focal (Bravard-Jacksonian) limited to brain lobe affected by the PRES which become generalized secondarily. All patients had seizures, one presented a status epilepticus. They all underwent magnetic resonance imaging (MRI). Typical imaging findings characteristically involve the white matter bilaterally in the parieto-occipital regions. Involvement of the white matter is constant. To equilibrate the systemic blood pressure, we used calcium channel blockers in all cases (nicardipine in the electric syringe pump in one case). The therapeutic goal was to maintain a mean arterial pressure between 105 and 125 mmHg.

Conclusions: PRES is highly diverse in terms of etiologies. Our series is particular by the large number of cases of PRES compared to the literature but especially by the diversity of the etiologies of PRES. All our patients had chronic renal failure and / or underlying nephropathy.

Keywords : PRES, Hypertension, Etiologies, Chronic renal failure, seizure

EFFECT OF CHOLECALCIFEROL ON RATE OF MORNING BLOOD PRESSURE RISE IN WOMEN WITH ARTERIAL HYPERTENSION IN PREMENOPAUSAL AND EARLY POSTMENOPAUSAL PERIODS

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Objective: To assess effect of cholecalciferol on rate of morning blood pressure (BP) rise in women with arterial hypertension (AH) in premenopausal and early postmenopausal periods.

Design and method: We investigated 102 women with AH stage II risk 3 aged 50 (48; 53) years: 50 females in premenopausal period – group I and 52 females in early postmenopausal period – group II. Serum level of 25(OH)D was determined by the immunoenzymatic assay. In groups I and II we identified subgroups with the level of 25(OH)D < 30 ng/ml: subgroup IB (n = 25) and subgroup IIB (n = 21) respectively, in which antihypertensive therapy was supplemented with cholecalciferol 2,000 IU/day for 3 months. In subgroups IA (n = 25) and IIA (n = 31) cholecalciferol was not administered. The rate of morning BP rise was calculated by the ratio of the BP rise value to its time using daily monitoring of BP.

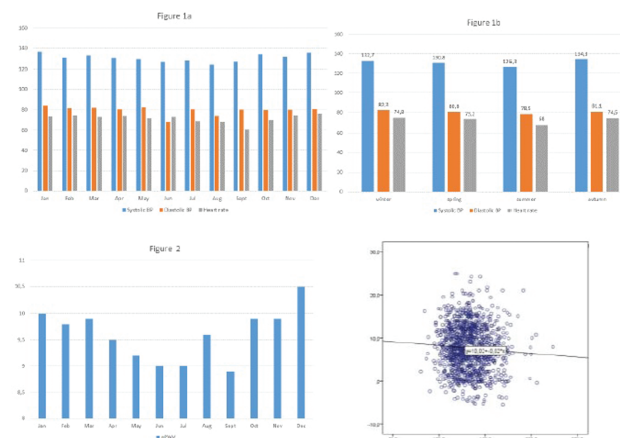
Results: At baseline the level of 25(OH)D was lower ($p < 0,05$) in subgroups IB ($19,3 \pm 8,5$ ng/ml) and IIB ($18,2 \pm 9,5$ ng/ml) than in the comparable subgroups IA ($26,7 \pm 11,5$ ng/ml) and IIA ($27,4 \pm 10,5$ ng/ml). After supplementation the level of 25(OH)D increased ($p < 0,001$) in subgroup IB ($37,28 \pm 11,97$ ng/ml) and in subgroup IIB ($36,4 \pm 10,0$ ng/ml), and became higher ($p < 0,001$) than in the comparable subgroups I and IIA. At baseline, subgroups IA and IB did not differ ($p > 0,05$) by rate of morning SBP/DBP rise. In subgroup IIB rate of morning DBP rise was higher ($p = 0,04$) than in subgroup IIA. After therapy in subgroup IB there was a decrease rate of morning SBP/DBP rise ($p < 0,05$); in subgroup IA, rate of morning SBP/DBP rise did not change ($p > 0,05$). In subgroup IIA, there was no decrease ($p = 0,62$) rate of morning DBP rise, while in subgroup IIB, rate of morning DBP rise in the decreased ($p < 0,05$) compared to the baseline and in comparison with rate of morning DBP rise in subgroup IIA after therapy ($p = 0,04$). The contribution of cholecalciferol to the dynamics of rate of morning DBP rise was established: $F = 4,33$, $p = 0,04$.

Conclusions: Correction of 25(OH)D level by intake of cholecalciferol 2000 IU/day for 3 months leads to reduction of rate of morning BP rise in women with AH.

SEASONAL VARIATION IN METEOROLOGICAL PARAMETERS AND BLOOD PRESSURE IN CROATIAN ADULT POPULATION

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Objective: There are many reports on the seasonality of cardiovascular risk factors particularly of blood pressure (BP). Our aim was to analyze association of BP with various meteorological parameters in random sample of general Croatian adult population.



Design and method: EHUF -2 study is nation-wide survey (Croatian Science Foundation) on prevalence, treatment and control of hypertension in Croatia. In 2018–2021 a random sample of 1321 subjects were enrolled. Office blood pressure (BP) and heart rate were measured in sitting position using Omron 3 device three times and average BP values were calculated. Estimated pulse wave velocity (ePWV) was calculated using validated equation. Meteorological data (mean daily 2 m air temperature – T2m, atmosphere pressure, air humidity measured at meteorological stations according to WMO standards) were collected in Croatian Meteorological and Hydrological Service.

Results: We found significant difference in systolic and diastolic BP, heart rate and ePWV across months (Figure 1a and Figure 2), as well significant correlation between all parameters and T2m. (Figure 3 for systolic BP). There is nonsignificant trend in association between systolic BP and air humidity. We failed to find association of diastolic BP, heart rate and ePWV with any of analysed meteorological parameters. Furthermore, we found inverse association between systolic BP, diastolic BP and heart rate with T2m i.e. we confirmed seasonal fluctuations (Figure 1b).

Conclusions: Our data confirmed findings of seasonal (inverse) variation between BP and T2m. Interestingly, we found association of seasonal variation and ePWV. T2m has impact on long-term BP variability but also on ePWV and should be taken into account in clinical research as well as in regular clinical work.

VARIATION IN MEAN ARTERIAL PRESSURE AND ITS HEMODYNAMIC COMPONENTS DURING 24-HOUR AMBULATORY PULSE WAVE ANALYSIS: IMPACT OF AGE, RACE, AND GENDER

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Objective: Blood pressure (BP) is highly variable but the concomitant variations of the underlying hemodynamic components [heart rate (HR), stroke volume (SV), and total vascular resistance (TVR)] are not known. We postulated that covariance (cov) analysis of 24-hour ambulatory pulse wave analysis (PWA) could reveal relevant trends in hemodynamic variability (var) within and between individuals.

Design and method: Ambulatory BP with PWA (Mobil-O-Graph, IEM, Stolberg, DE) was performed every 20 minutes for 24 hours. Mean arterial pressure (MAP)