SP357 **IMPACT OF AMLODIPINE ON IRON AND ERYTHROPOIETIN DOSES DURING ANEMIA TREATMENT OF HEMODIALYSIS PATIENTS**

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**INTRODUCTION AND AIMS:** Cardiovascular disease is the most important complication and the main reason for the mortality in hemodialysis (HD) patients. L-type dihydropyridine calcium channel blockers (L-TCCs) are frequently used to control blood pressure in HD patients. The main cause of anemia in HD patients is erythropoietin (EPO) and iron deficiency. It was demonstrated that, L-TCCs impeded the calcium influx and blocked the effect of EPO in vitro. In addition, in recent years, it has been shown a significant effect of L-TCCs on the increase in cellular iron uptake. We hypothesized that the use of amlodipine in HD patients could inhibit the activity of EPO and lead to the need for increasing doses of erythropoiesis stimulating agents (ESA). The purpose of our work was to investigate whether amlodipine use was associated with increasing dose of intravenous iron and ESA.

**METHODS:** It was a regional multicenter retrospective observational study. A total of 88 adult HD patients were classified into 2 groups based on amlodipine usage: the 1st group ($n = 27$) received amlodipine for at least 6 months and the 2nd one ($n = 61$) received no any treatment of amlodipine. The patients of the both groups did not differ by such parameters as sex difference ($\chi 2 = 0.14$; $p = 0.71$), age ($p = 0.35$), duration of HD treatment ($p = 0.23$) and comorbidity index ($p = 0.59$). The hemoglobin level (Hb), the dose of intravenous iron and continuous erythropoietin receptor activator (CERA) were analyzed. Statistical analysis included Student's t-test, nonparametric (U-) Mann-Whitney's test and Fisher's exact test. Relative risk (RR) and odds ratio (OR) were calculated using logistic regression.

**RESULTS:** A total, intravenous iron was used in 43/88 (49 %) HD patients, CERA was prescribed to 68/88 (77 %) patients. The prescribing of intravenous iron was in 22/27 (81.5%) patients of the amlodipine group and in 21/61 (34.4%) patients of the 2nd group ($\chi 2 = 16.4$; $p = 0.0001$). CERA was administered to 25/27 (92.6%) patients in the 1st group and 43/61 (70.5%) patients in non-user group ($\chi 2 = 5.2$; $p = 0.02$). The Hb level in the patients of Group I tended to decrease, but, it did not differ statistically from the patients of Group II: 106.5 [100.1-110] g / l vs 111 [107-113] g / l ($p = 0.09$). However, in order to achieve the target Hb level in the patients of amlodipine group, iron was used in a dose 200 [100-400] vs 50 [0-200] mg / month in the non-user patients ($p = 0.002$). CERA was prescribed in a dose (85 [70-100] vs 50 [50-75] μg / month, respectively ($p = 0.02$). Logistic regression analysis showed a significant effect of amlodipine treatment on the need for iron and CERA supplements: OR = 3.9; 95% CI (1.27-12.06), $p = 0.002$, and OR = 5.2; 95% CI (1.2-24.4), $p = 0.03$. RR = 1.3 95% CI (1.08-1.6), $p = 0.006$, respectively.

**CONCLUSIONS:** Our results suggest that amlodipine administration significantly increase the dose of intravenous iron and CERA in HD patients with anemia. Further studies, devoted to the mechanism of the L-TCCs effect on anemia will avoid unreasonable prescriptions in the treatment of HD patients.