SGLT-2 inhibitor-related polycythemia – from the Dubrava University Hospital Registry

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Introduction: Sodium-glucose co-transporter 2 (SGLT-2) inhibitors are the latest addition to guideline-directed medical therapy in heart failure (HF)[1]. It has been documented that SGLT-2 inhibitors significantly increase hemoglobin (Hgb) and hematocrit (Hct) levels via several supposed mechanisms[2]. We analyzed SGLT-2 inhibitors treated HF patients and dynamics of Hgb and Hct levels in follow-up period of 12 months.

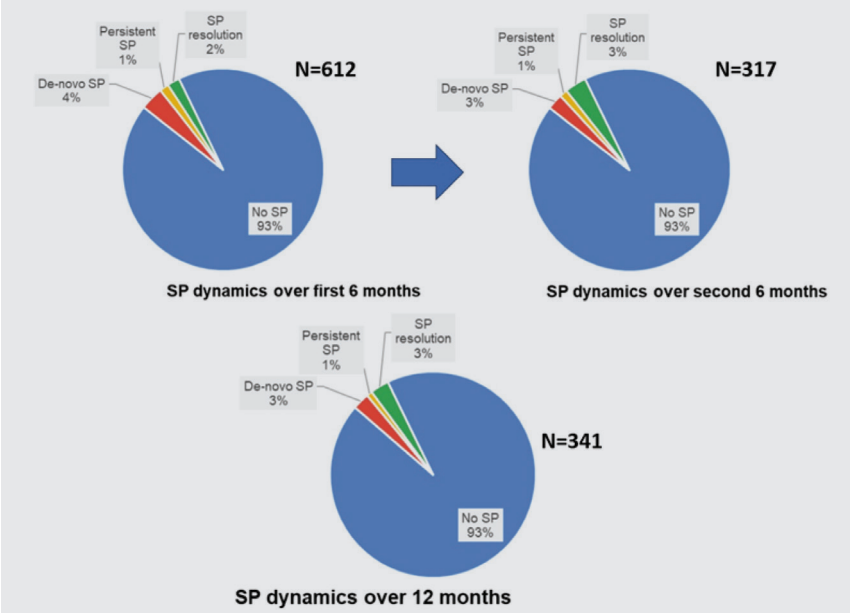

FIGURE 1. Dynamics of secondary polycythemia in a heart failure patients over 6 and 12 months of follow-up.
SP = secondary polycythemia

Metods: We consider all of patients with or developing Hgb levels >160 g/L for females or >165 g/L for males to represent secondary polycythemia (SP).

Patients and Results: We analyzed a total of 848 SGLT-2 inhibitor treated HF patients. At the baseline, median Hgb was 136 g/L, IQR (124-147). A total of 31 (3.7%) patients fulfilled WHO criteria for polycythemia. At 6 months, median Hgb was 140 g/L, IQR (127-150) and was significantly higher in comparison to baseline (P<0.001). At 12 month, median Hgb was 141 g/L, IQR (130-151) and was significantly different in comparison to baseline (P<0.001) but not in comparison to 6 months (P=0.253). Percentage of patients with SP did not significantly differ at 6 months (5.2%) and 12 months (3.5%) in comparison to baseline (P>0.05 for both analyses). However, structure of the patient cohort presenting with SP significantly differed over time (P<0.001) as shown in **Figure 1**. About 1% of patients had persistent SP at both 6 months in comparison to baseline and at 12 months in comparison to baseline and 6 months milestone. However, during first 6 months 4% of patients developed de-novo SP in comparison to baseline, whereas 2% of patients experienced SP resolution. At subsequent 6 months, 3% of new patients developed SP and 3% of new patients experienced SP resolution in comparison to first 6 months period. Overall, during 12 months similar proportion of patients developed SP and experienced SP resolution, whereas 1% of patients had persisting SP.

Conclusion: These observations shed novel light on phenomenon of erythrocytosis developing in association with SGLT-2 inhibitor use in HF patients. As our data show, there is continuous exchange of patients who develop and resolute SP over time with only a fraction of them (1%) experiencing persistent polycythemia, and therefore probably require further hematologic workup.

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LITERATURE

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