Platelet indices and their changes on the follow-up in children with pulmonary arterial hypertension

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Introduction: Inflammatory cells and platelets may also play a significant role in pathogenesis of pulmonary arterial hypertension (PAH). Previous studies have demonstrated that altered platelet functions occurs in patients with PAH. Nevertheless it remains unclear platelet dysfunction is a cause or consequence of the disease. Platelet indices include mean platelet volume (MPV) and platelet distribution width (PDW) is potentially useful markers for assessing the platelet function. We aimed to evaluate the platelet indices how it has changed before and after the treatment in PAH patients.

Method: Our study group consisted of 40 patients (19 females, 21 males, and median 5.5 years) with PAH. An age and gender matched control group was composed of 37 healthy peers (17 females, 20 males with a median age 5.0 years). Mean platelet volume and PDW values before and 6 months after the PAH therapy were obtained retrospectively from hospital records.

Results: Initial mean MPV value was significantly higher in PAH group when compared with control group (8.21 ± 1.29 vs 7.34± 0.788 fl, respectively; P<0.05). There was no significant difference was observed between study and control group in terms of initial PDW value (16.28± 0.97 vs 16.55 + 0.47 respectively; P >0.05). After the 6 months of specific therapy with PAH-approved drug therapy significant difference was persisted between the study and control group in terms of MPV (8.27 ± 1.24 vs 7.34± 0.788 fl, respectively; P<0.05). On the other hand no difference were detected between the initial and follow-up results of MPV (p<0.05). Likewise we observed no significant difference in PDW values when compared before and 6 months after the PAH therapy (16.28± 0.97 vs 16.22 + 1.14, respectively; P >0.05).

Conclusions: We have observed that MPV is significantly elevated in pediatric PAH patients. Medical therapies with PAH-approved drugs have no effect on the MPV values. This result suggested that specific PAH treatment have no positive effect on platelet function in PAH.