PB1846 ALTERATIONS IN PRIMARY HEMOSTASIS AS ADDITIONAL RISK FACTORS OF BLEEDING IN PATIENTS WITH NEWLY DIAGNOSED ACUTE MYELOID LEUKEMIA (AML): UPDATED PROSPECTIVE ANALYSIS.

**Topic:** 04. Acute myeloid leukemia - Clinical

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**Background:** Hemorrhagic complications in patients with AML are usually associated with thrombocytopenia, infections, concomitant disorders and coagulation abnormalities. Von Willebrand factor could well be considered as a link in hemorrhagic events because of its unique features in primary hemostasis as well as further role in factor VIII binding and stabilizing role.

**Aims:** The primary endpoints were a qualitative and quantitative functions of plasma von Willebrand factor (vWF) which include measurements of vWF activity (vWF:ristocetin cofactor [vWF:RCo]), vWF level (vWF:antigen [vWF:Ag]), factor VIII coagulation activity regarding to vWF(vWF:FVIII) and FVIII activity (FVIII) as an additional bleeding risk factor in newly diagnosed AML patients.

**Methods:** 34 patients with newly diagnosed AML (excluded APL) were included in the study group (17 males and 17 females; median age: 50 years). The diagnosis of AML established by FAB and WHO classification systems and the plasma samples were collected before the beginning of induction therapy. The grade (G) of bleeding events was assessed according to Modified WHO Bleeding Scale (WHO BS). Control group included 20 age-matched and sex-matched healthy individuals. Levels of vWF:Ag and vWF:RCo tested on automated latex particle-enhanced immunoassay ACL Elite Pro and ACL TOP 300 (Instrumentation Laboratory). vWF:FVIII and FVIII were measured using a clotting assay with factors deficient plasma by fully automated coagulometer ACL Elite Pro (Instrumentation Laboratory).

**Results:** Seventeen patients (50 %) in the study group were experienced bleeding events (G1-4) before and during the first course of treatment and other half of patients had no bleeding episodes (G0). There were no bleeding episodes in the control group (G0). The median platelets in the study group was 39,5 versus 260 in the control group (p<0,05).

In seven patients (20,5%) with AML we observed levels of vWF:RCo below normal ranges. Among them the most frequent bleeding events were G2 (4/7) and G4 (2/7), two of them died during the first course of chemotherapy due to gastrointestinal bleeding. Therefore we found astastically significant association between a decreased levels of vWF:RCo below normal ranges and the occurrence of severe bleeding episodes (G2-G4) in patients with AML compared with the group that had normal ranges of vWF:RCo and no bleeding episodes (G0) (p<0,001). Despite decreasing in vWF:RCo below normal ranges in the control group as an accidental finding, bleeding events have not emerged.

Low levels of vWF:Ag had been observed in seven patients with AML (20%) and was associated with the occurrence of severe bleeding in patients with AML compared with the patients who had normal vWF:Ag levels and no bleeding episodes (p=0.03).

It is important to mention, that vWF:Ag levels (median 142,5) were elevated in most cases (56%) in the main group and are associated with a compensatory mechanism for stopping bleeding compared with the control group.

Low vWF:FVIII and FVIII levels in patients with AML and bleeding episodes G2-G4 as well as other values had statistic difference to the patients with no bleeding events (G0) (p=0.03).
Summary/Conclusion: Despite the rapid development of treatment options we still need better understanding of underlying causes of haemorrhagic complications due to high mortality rates from bleeding. According to received results activity of vWF together with quantitative values may become a promising purposes for further investigation and creation of bleeding risk scale in patients with AML.