PB1802 ACUTE PROMYELOCYTIC LEUKEMIA AND THROMBOSIS: HOW TO IDENTIFY THE HIGH-RISK PATIENTS?

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

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**Background:**
Acute promyelocytic leukemia (APL) is frequently associated with a disseminated intravascular coagulopathy (DIC), leading to severe bleeding complications. It's thus a diagnostic and therapeutic emergency. Nevertheless, the thrombotic risk is not to be neglected and is an interesting issue to highlight.

**Aims:**
The aim of this study was to describe the thromboembolic events (TE) associated with APL and to evaluate the associated clinical and biological factors.

**Methods:**
We conducted a retrospective single-center study that included patients diagnosed with APL between 2010 and 2019 in our department, treated with all-trans retinoic acid (ATRA) and anthracycline. Descriptive data related to the TE was collected. In order to identify the risk factors of TE, univariate and multivariate analysis were performed.

**Results:**
This study included 90 patients. A TE occurred in 10 patients (11%), with a median age of 48 years [20-62 years], and a sex-ratio of 1. None had a previous history of thrombosis. Cardiovascular risk factors were found in 5 patients with TE (50%).

An arterial TE developed in half of the cases: 2 had cerebrovascular accident (CVA, 20%), 2 had pulmonary embolism (PE, 20%), and 1 had myocardial infarction (MI, 10%). The venous TE encompassed deep vein thrombosis (DVT, 40%), and Budd-Chiari syndrome (10%).

The TE was an initial symptom of APL for 4 patients (40%). It occurred during induction, and consolidation for 4 and 2 patients respectively. None of these patients had a differentiation syndrome or severe bleeding at the time of the TE. DIC was present in 2 patients (20%).

As potential predictors of TE, we analyzed the following parameters: gender, age, Body Mass Index, cardiovascular risk factors, white blood cell (WBC) count greater than 10 G/L, hemoglobin (Hb), platelet count, fibrinogen less than 2g/l, prothrombin time (PT) less than 60%, DIC at diagnosis, Sanz score, cytological type, presence of CD2, CD15, additional cytogenetic abnormalities, PML-RARa variant, and the occurrence of a differentiation syndrome during induction. The following parameters were related to a statistically significant higher incidence of TE: Cardiovascular risk factors (p=0.011; 50% vs 29%), PT < 60% (p=0.02; 72% vs 32.5%), differentiation syndrome during induction (p=0.05; 40% vs 15%). The independent risk factors of TE, identified through the multivariate analysis, were: age (p=0.015, HR=7.7, IC 95%: [1.5 – 40]), and PT < 60% (p=0.019, HR=7.5, IC95% [1.4 – 40.3]).

**Summary/Conclusion:**

The occurrence of TE in APL is a risk that should not be underestimated. The therapeutic strategy remains a challenge to overcome due to the associated DIC and thrombocytopenia. A better understanding of the risk factors is crucial to improve the management and the outcome of TE. Would a prophylaxis strategy be beneficial for APL patients with high risk of thrombosis?