UNIVERSITÀ DEGLI STUDI DI TORINO

"In patients with Polycythemia Vera older age is the prognostic factor at highest impact on survival."

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IN PATIENTS WITH POLYCYTHEMIA VERA OLDER AGE IS THE PROGNOSTIC FACTOR AT HIGHEST IMPACT ON SURVIVAL

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Background: Life expectancy of Polycythemia Vera (PV) patients is reduced compared with that of the general population mainly due to thrombotic events and evolution into myelofibrotic phase or secondary myelodisplasia/acute leukemia. Recently, in a large study published by IWG-MRT (Tefferi et al, Leukemia 2013) authors developed a widely applicable prognostic model, delineating three different prognostic risk groups by age, leukocyte count and venous thrombosis.

Aims: In this study we tested the IWG-MRT prognostic score in a retrospective group of 204 World Health Organization-defined PV patients, diagnosed from 1974 to 2013 by a single Italian haematological centre (Turin).

Methods: We analysed 204 PV patients. According to the IWG-MRT score, patients were divided into three groups: adverse points are assigned to age ≥67 years (5 points), age 57–66 years (2 points), leukocyte count ≥15 x10^9/l (1 point) and venous thrombosis (1 point). In this way patients were divided in low-risk (0 points), intermediate-risk (1 or 2 points) and high-risk (≥3 points) groups. We evaluated overall survival (OS) from diagnosis to death by the Kaplan Meyer method and Hazard Ratio were estimated with the Cox Models. The cumulative incidence of death due to PD was estimated by the method proposed by Gooley et al, accounting for competing events.

Results: Characteristics at diagnosis were as follows: median age was 65 years (31% were below age 57 years), 104 (51%) were male, constitutional symptoms and palpable splenomegaly were observed in 42 (21%) and 36 (18%) patients, respectively. Twenty-one (10%) patients showed leukocytosis (≥15 x 10^9/L) whereas thrombocytosis (≥450 x 10^9/L) was present in 77 (38%) patients. Fifty-three patients had prevoius thrombotic events (40 arterious and 13 venous). As expected, approximately 58% of the patients were positive for JAK2 mutations (V617F or exon12). At a median follow-up of 93 months we observed 27 (13%) deaths, 26 (13%) myelofibrotic transformations and 7 (3%) leukemic evolution. The incidence of post diagnosis thrombosis arterial vs venous and major hemorrage were 15%, 11% and 9% respectively

The overall survival at 10 years was 85.3% (95%CI:77.6-90.5) and the cumulative incidence of death due to PD (leukemic transformation or evolution in myelofibrosis) adjusted for competitive risk event was 9.8% (95%IC: 4.5-15.0).

The prognostic model displayed discrimination between high-risk (n= 91; 10-year survival 68.3%; vs low-risk HR 8.48; 95%CI: 1.94-37.16), intermediate-risk (n= 49; 10-year survival 94.7%; vs low-risk HR 3.23; 95%CI: 0.62-16.68) and low-risk (n=42; 10-year survival 100%) patient groups. The C-statistic was 0.751.

Age was the prognostic factor at highest impact on OS (fig.1); when we consider the older age as a only prognostic factor the discrimination between risk group was similar to those defined by IWG-MRT. The C-statistic was 0.748.

Conclusion: In a retrospective cohort of PV patients, IWG-MRT prognostic score was confirmed as a good predictor of survival and prognosis. Older age was described with the prognostic factor at highest impact on OS.

Fig1