Abstract: PB2202

Title: NOVEL PREDICTORS FOR VENOUS AND ARTERIAL THROMBOSIS IN POLYCYTHEMIA VERA

Abstract Type: Publication Only

Session Title: Myeloproliferative neoplasms - Clinical

Background:

Current thrombotic risk stratification in PV is based on presence of age >60 years or/and previous thrombosis. Recent data revealed increased thrombotic risk in presence of cardiovascular (CV) risk factors but with inconsistencies.

Aims:

of our study was to identify prognostic factors at the time of diagnosis, that may have an impact on prediction of thrombosis in PV patients (pts).

Methods:

The study included 816pts with PV diagnosed from 2005-2022 according to WHO classification and treated in university centre. The median follow-up was 71 months (2-245). We analysed effects of age, gender, laboratory parameters including absolute neutrophile count (ANC), absolute lymphocytic count (ALC), neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR), history of previous thrombosis, spleen size, age-adjusted Charlson comorbidity score (ACCI) as well as the CV risk factors including arterial hypertension, diabetes, smoking attitude and hyperlipidemia. JAK2 was analysed in 598 pts with positivity in 97.83%.

Results:

Main characteristics were as follows: mean age was 62y (18-87) (M/F=422/394) and median laboratory parameters: hemoglobin 173g/L (142-248); haematocrit 52% (42-75); WBC 13.2x10^9/L (4.2-53.5); ANC 9.71±4.74; ALC 2.16±0.72; platelets 648x10^9/L (26-1980), NLR 4.90±3.03 and PLR 360.09±213.09. Splenomegaly was present in 413pts (50.6%).According to the standard PV risk score, 216 pts were stratified as low risk (26.5%) and 600 as high risk (73.5%). Secondary malignancy was present in 94 pts (11.5%). According to ACCI 96 pts (11.8%) were without comorbidities, mild grade had 281 pts (34.4%), moderate 294 pts (36%) and severe 145 pts (17.8%). Without CV risk factors was 209 pts (25.6%), 317 pts (38.8%) had one CV factor, 224 pts (27.5%) two, 61 pts (7.5%) had three, and only 5 (0.6%) had four. CV risk factors were arterial hypertension in 514 pts (63%), smoking 240 (29.4%), diabetes 104 (13.1%), and hyperlipidemia in 109 pts (13.1%).

Previous thrombosis was reported in 182 pts (22.3%) with 222 thrombotic events (160 arterial, 62 venous) as follows: 126 pts had arterial thrombosis, 47 venous and 9 both.

During follow up 111 pts (13.6%) had 120 thrombotic events (82 arterial, 38 venous) including 76 pts with arterial, 34 with venous and 1 with both types of thrombosis. Significant predictors of **development of thrombosis** were found to be presence at least one of CV risk factors (p=0.007), especially arterial hypertension (p=0.001) and hyperlipidaemia (p=0.002), spleen ≥12cm (p=0.023), NLR ≥5 (p=0.002), PLR ≥500 (p=0.001), ACCI (p<0.001), previous thrombosis (p<0.001), standard score (p<0.001), ASA (p=0.017) and phlebotomy (p=0.021).

Previous thrombosis (p=0.029), CCI risk groups (p<0.001), presence of CV factor ≥1 (p=0.001) or secondary malignancy (p<0.001) predicted **subsequent venous events**. In comparison, previous thrombosis (p = 0.03), male gender (p=0.006) standard score (p=0.001), ACCI (p<0.001), CV risk factor ≥1 (p<0.001), NLR ≥5 (p=0.008) and PLR ≥500 (p<0.001), were predictors of **subsequent arterial events**. In multivariate analysis, the risk of venous thrombosis was independently associated with only ACCI (HR 3.75; p<0.001) while arterial thrombosis with CCI (HR2 2.12; p<0.01) and PLR ≥500 (HR 1.886, p=0.028). Patients with thrombotic complications during

the follow-up had significantly shorter survival (p=0.048).

Summary/Conclusion:

The worldwide-recognized prognostic role of previous thrombosis and standard score in PV probably deserves some deeper insight. We identify that age-adjusted CCI is the most reliable predictor of subsequent thrombosis, in addition to PLR ≥500 for arterial thrombosis, both inexpensive and easily accessible prognostic markers.

Keywords: Polycythemia vera, Myeloproliferative disorder, Thrombosis, Prediction