Abstract: P1030

Title: PROGRESSION TO MYELOFIBROSIS IN PATIENTS WITH ESSENTIAL THROMBOCYTHEMIA: AN ANALYSIS FROM THE PROSPECTIVE MOST STUDY

Abstract Type: Poster Presentation

Topic: Myeloproliferative neoplasms - Clinical

Background:

Essential thrombocythemia (ET) is a myeloproliferative neoplasm characterized by clonal blood cell proliferation, excessive platelet (PLT) production, constitutional symptoms, increased risk of vascular complications, and risk of progression to myelofibrosis (MF). Previous prognostic studies of patients with ET were largely based on retrospective analyses and there are limited prospective data regarding ET disease progression. The prospective **M**yelofibrosis and Essential Thrombocythemia **O**bservational **St**udy (MOST) collected real-world data from patients with ET.

Aims:

To evaluate ET progression in patients enrolled in MOST

Methods:

MOST (NCT02953704) enrolled patients with ET aged ≥60 years, or with a history of thromboembolic events (TEs) or who were receiving ET-directed therapy (except aspirin only). Data on baseline clinical characteristics were collected as previously described (Yacoub A, et al. *Clin Lymphoma Myeloma Leuk.* 2021;21(7):461-9). ET-to-MF progression was defined as meeting ≥1 of the following criteria on study: 1) bone marrow biopsy with fibrosis grade ≥2 or pathological diagnosis of MF; 2) death due to MF/myelodysplastic syndrome/acute myeloid leukemia; 3) circulating blasts >1% and new/worsening splenomegaly (SPM); 4) new/worsening SPM and ≥2 of: white blood cell (WBC) count >11×109/L, hemoglobin (Hb) <10g/dL, and PLT count <100×109/L. Median (range) follow-up was 57.3 months (42-70).

Results:

Of the 1237 patients with ET enrolled in MOST: 53 (4.3%) met criteria for progression to MF, most of whom progressed due to fibrosis (criterion 1, 56.6%); 15.1%, 11.3%, and 28.3% of patients progressed due to criteria 2, 3, and 4, respectively. Notably, only 176 patients (14.2%) enrolled had bone marrow data available. Comparison of the enrollment characteristics of patients with vs without progression showed no differences in age at enrollment or diagnosis (**Table**). However, time from diagnosis to enrollment and from diagnosis to end of study were significantly longer in patients with vs without progression (median 7.9 vs 4.2 years, median 12.7 vs 9.0 years, respectively; both *P*=0.001). Of all enrolled patients with vs without progression tested for known driver mutations, a higher percentage with progression were *JAK2*-positive vs those without (80.6% [29/36] vs 69.7% [598/858]). Similar percentages of patients with vs without progression were receiving ET-directed therapies at enrollment (94.3% vs 94.8%). Among patients with vs without progression, mean baseline Hb was significantly lower (12.5g/dL vs 13.1g/dL; *P*=0.026), mean WBC counts were significantly higher (10.4×109/L vs 7.4×109/L; *P*<0.001), and mean PLT counts were similar (418.6×109/L vs 455.0×109/L; *P*=0.466). Baseline MPN-SAF TSS was similar for patients with vs without progression. A lower percentage of patients with vs without progression had ≥1 TEs (1.9% [1/53] vs 3.7% [44/1184]) during the study, but a higher percentage had ≥1 hemorrhagic event (7.5% [4/53] vs 1.3% [15/1184]).

Summary/Conclusion:

This analysis of data from MOST showed that 4.3% of patients with ET progressed to MF during the study period. Compared with patients without progression, patients with ET-to-MF progression had longer disease duration, higher WBC count, and lower Hb at enrollment; symptom burden at enrollment was similar between

the 2 groups. One limitation of this study is the lack of bone marrow data for most patients, possibly underestimating progression to MF. These findings and further analysis of MOST data will add insight on disease progression in patients with ET and facilitate clinical management of this patient population.

Keywords: Essential Thrombocytemia, Myeloproliferative disorder, Progression, Myelofibrosis