SOHC
SWISS ONCOLOGY & HEMATOLOGY CONGRESS

JAK2V617F mutation in northeast Thailand patients with Myeloproliferative neoplasms.

Categories :Hemostasis, transfusion medicine, vascular, laboratory medicine, benign hematology (SSH award)

K. Chootawiriyasakul, N. Teawtrakul, C. Wanitpongpun, S. Sanmai, Presenter: K. Chootawiriyasakul (Khon Kaen, Thailand)

K. Chootawiriyasakul[1], N. Teawtrakul[2], C. Wanitpongpun[2], S. Sanmai[1], Presenter: K. Chootawiriyasakul[1]

[1]Medicine, Clinical Laboratory of Department of Medicine, Faculty of medicine, Khon Kaen University, Thailand, Khon Kaen, Thailand,

[2]Medicine, Division of Hematology, Department of Medicine, Faculty of Medicine, Khon Kaen, Thailand, Khon Kaen, Thailand

Objective

The activating JAK2 mutation resulting from a G>T transversion at codon 617 (JAK2-V617F) is associated with myeloproliferative neoplasms (MPNs), including polycythemia vera (PV), essential thrombocythemia (ET), and primary myelofibrosis (PMF). The JAK2-V617F mutation is included as a major diagnostic criterion for MPNs in the 2008 WHO classification. Its frequency varies among populations, but data from northeastern Thailand have been lacking. Therefore, we aimed to determine the frequency of the JAK2-V617F mutation and its laboratory correlations in patients from northeastern Thailand.

Methods

We retrospectively reviewed all patients from hospitals in northeastern Thailand who were referred by hematologists for JAK2-V617F testing between January 2019 and January 2024. A total of 418 peripheral blood and bone marrow samples were analyzed using quantitative allele-specific amplification (QUASA) real-time PCR.

Results

Of the 418 patients, 101 (24.2%) were positive and 317 (75.8%) were negative for the JAK2-V617F mutation. Among the 101 mutation-positive patients, 46 (45.5%) had PV, 39 (38.6%) had ET, 11 (10.9%) had PMF, and 5 (5.0%) had unclassified MPNs. The frequency observed in this cohort is consistent with previous reports from other regions. Incorporating JAK2-V617F mutation screening into the initial evaluation of patients suspected of having MPNs is valuable.

Table 1. Characteristics of patients.

Parameter	JAK2 V617F Positive patients	JAK2V617F Negative patients
Patients N (%)	101 (24.17%)	317 (75.87%)
Male mean age (range)	59.86 (21–88)	43.29 (4–91)
Female mean age (range)	57.14 (23–85)	48.12 (6–82)

Table 2. Characteristics of patients with the JAK2 V617F mutation.

Disease	Number of patients (%)	Male/ Female	Male mean age (range)	Female mean age (range)
PV	46 (45.54)	28/18	59.80 (29–88)	56.28 (22-78)
ET	39 (38.61)	24/15	60.93 (22-85)	57.28 (22-79)
MF	11 (10.90)	5/6	60.39 (39-86)	55.22 (25-80)
Unclassified MPNs	5 (4.95)	5/0	50.17 (25-84)	-

Conclusion

The frequency of the JAK2-V617F mutation in our study is compatible with previous reports. JAK2-V617F mutation screening can be incorporated in the initial evaluation of patients suspected of having MPNs. Detection of JAK2-V617F is of diagnostic significance and quantification of this mutation is also useful in monitoring patients as a residual disease marker.

Presented at SOHC 2025 from 19 – 21 November 2025