In patients with myelofibrosis (MF), Jak inhibitor therapy can improve both cytopenic and disease symptoms.

- Commonly, dosing—and thus efficacy—of Jak1/2 inhibitors is limited in patients with cytopenic MF due to drug-induced exacerbation of cytopenias.
- Pacritinib is a Jak1/2-potently inhibiting JAK2 inhibitor that is approved by the Food and Drug Administration (FDA) in the United States for the treatment of adults with myelofibrosis who have a platelet count ≤50 x 10^9/L.
- Clinical studies of pacritinib have included patients across the cytopenic spectrum, including any grade of baseline (BL) anemia or thrombocytopenia.

### RESULTS

**Ammonia release in patients treated with pacritinib in the PERSIST-1 and PERSIST-2 studies were analyzed, stratified by baseline blood counts (5 subgroups):**

- Platelet count: <100 x 10^9/L
- Hemoglobin: <8 x 10^12/L and <10 x 10^12/L
- Total symptomatic score (SS) decreased by 25% in patients across all cytopenic subgroups.
- Improvement in TSS was observed by week 12 with ongoing improvement through week 24 (Figure 2).

**Characteristics**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Platelet count &gt;100 x 10^9/L</th>
<th>Platelet count 100-200 x 10^9/L</th>
<th>Platelet count &gt;200 x 10^9/L</th>
<th>Hemoglobin ≥10 g/dL</th>
<th>Hemoglobin &lt;10 g/dL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median % Change from baseline (%)</td>
<td>35</td>
<td>30</td>
<td>40</td>
<td>35</td>
<td>30</td>
</tr>
</tbody>
</table>

**Any improvement in symptoms (TSS=0) occurred in 80-87% of patients across all cytopenia groups.**

**Median hemoglobin remained stable through week 24 (Figure 6), with some improvement in the subgroup with baseline hemoglobin <10 g/dL.**

### CONCLUSIONS

- Pacritinib demonstrates consistent efficacy for spleen and symptom response in patients with MF regardless of baseline blood counts.
- Patients with more severe anemia experienced hematologic improvement and tumor shrinkage.
- This consistent effect may relate to pacritinib’s unique mechanism of action and its ability to be delivered at full dose in patients regardless of cytopenia.

**REFERENCES:**
This study is supported by CTI BioPharma Corp. A complete copy of the study protocol is available from Dr. Nicos Gagelmann, the corresponding author. Key contributors were Dr. Donal McLornan, Dr. Nico Gagelmann, Dr. Pankit Vachhani, Dr. Halita Kathryn Al, Dr. Harris Ali, Dr. Philipp Trexler, Dr. Sarah Buckley, and Dr. Karisse Roman-Torres.

**AUTHORS:**
Mascarenhas et al.

**Journal:** Leukemia

**Original Article:**

**Presented at:** 2023 SOHO Annual Meeting June 6-9, 2023 Houston, Texas.

**Presenters:** Dr. Prithivraj Bose, P.Bose@mdanderson.org

**Disclosure:** All authors have disclosed relevant financial relationships and conflicts of interest as indicated in the article.