Myeloid Malignancy Risk in Large Vessel Vasculitis: A Propensity Score-Matched Analysis

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INTRODUCTION AND AIM

- Inflammatory and autoimmune diseases, including large-vessel vasculitis (LVV), may be associated with clonal hematopoiesis of indeterminate potential (CHIP). LVV includes giant cell arteritis (GCA) and Takayasu arteritis (TAK).
- Smaller studies have reported associations between inflammatory disorders and myeloid neoplasms.
- The risk of incident hematologic malignancy following LVV diagnosis remains poorly characterized.

METHODS

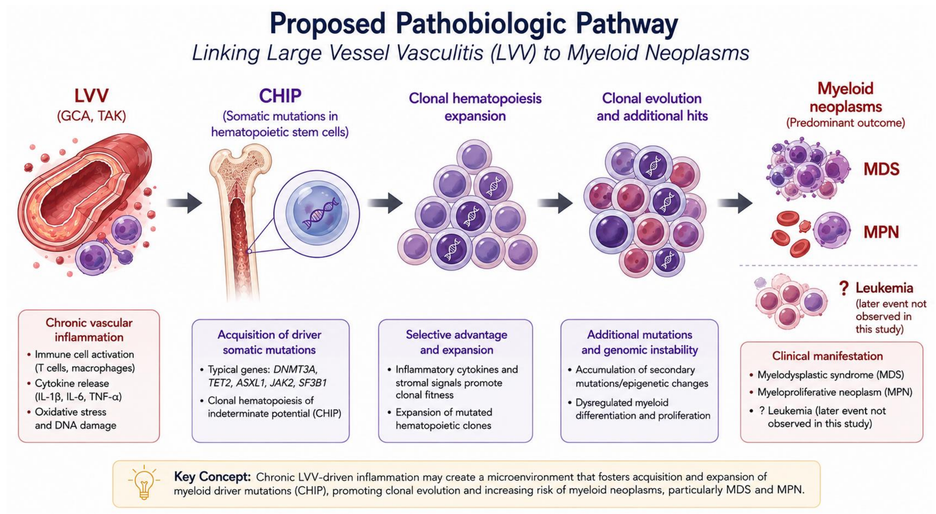
- Data source: TriNetX US Collaborative Network.
- Study period: 2005–2025.
- Included adults with LVV (GCA or TAK) and no prior malignancy.
- Index date: First recorded LVV diagnosis.
- Control group: Patients with seborrheic keratosis (SK), a benign age-related skin condition.
- Cohorts were propensity-score matched 1:1 for: Age, Sex , Race and ethnicity , Comorbidities , Immunosuppressive medications
- Outcomes included: Any hematologic malignancy – Lymphoma, Leukemia, Myelodysplastic syndrome (MDS) or Myeloproliferative neoplasm (MPN)
- Outcomes were assessed using Kaplan–Meier survival analysis and hazard ratios (HRs)

CONCLUSIONS

- LVV was associated with an increased risk of hematologic malignancy, mainly driven by chronic myeloid neoplasms, particularly MDS and MPN.
- The myeloid predominance suggests that CHIP may represent a biological link between LVV-related inflammation and myeloid clonal evolution.
- The absence of a significant leukemia association may reflect limited follow-up.
- This supports early hematology referral, consideration of CHIP screening in high-risk rheumatology patients, and structured myeloid malignancy surveillance at specialized CHIP clinics.

RESULTS

- After matching: LVV cohort: 40,355 patients
- SK control cohort: 40,355 patients
- Mean age: 68.5 years
- Female: 70.8%
- Median follow-up: 1,277 days
- LVV was associated with a higher risk of hematologic malignancy overall: HR 1.272 (95% CI 1.146–1.412; *P*=0.004)
- The increased risk was driven primarily by: **MDS:** HR 1.604 (95% CI 1.234–2.086; *P*<0.001)
- **MPN:** HR 1.285 (95% CI 1.061–1.556; *P*=0.006)
- No significant increase was observed for: **Lymphoma:** HR 1.153; *P*=0.117 or **Leukemia:** HR 1.158; *P*=0.695



CONTACT INFORMATION

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