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BLEEDING AND THROMBOTIC COMPLICATIONS OF RUXOLITINIB – A SYSTEMATIC REVIEW AND META ANALYSIS

M Shahzad MD[1], MK Amin MD [2], A Basharat MD [3], MF Khalid MD [4], J Noor MD [5], M Zaidi MD [6], A Gupta MD [7], MV Jaglal MD [8]

1. Moffitt Cancer Center, University of South Florida, Tampa, FL , USA
2. University of Kansas Medical Center, Kansas City, USA
3. Marshfield Clinic Health System, Marshfield, USA
4. Danbury Hospital, Danbury, USA
5. St. Dominic Hospital, Jackson, USA
6. Baptist Memorial Hospital, Oxford, MS
7. LSUHCC-S/Overton Brooks VAMC, Shreveport, USA
8. Moffitt Cancer Center, Tampa, USA

MOFFITT CANCER CENTER

INTRODUCTION

Ruxolitinib, a potent JAK1/2 inhibitor, is widely used in the treatment of myeloproliferative disorders, yet it carries significant risks of bleeding and thrombotic complications. Understanding the balance between its therapeutic benefits and potential adverse effects is crucial for optimizing patient outcomes. Our meta-analysis and systematic review will focus on the bleeding and thrombotic complications associated with Ruxolitinib therapy.

AIM

To focus on the bleeding and thrombotic complications of Ruxolitinib.

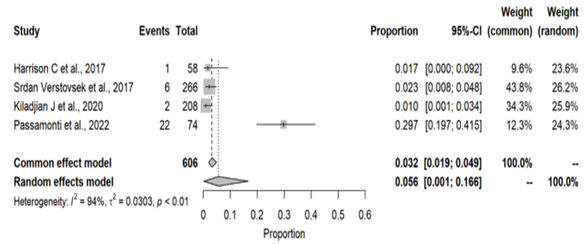
METHODS

- Following PRISMA guidelines, literature search was performed on PubMed, Cochrane and Clinicaltrials.gov.
- Six studies reporting bleeding or thrombotic complications in Ruxolitinib trials were included after screening 1716 articles.
- Inter-study variance was calculated using the Der Simonian-Laird Estimator.
- Proportions along with 95% confidence Interval (CI) were extracted to compute pooled analysis using the 'meta' package by Schwarzer et al. in the R programming language (version 4.16-2).

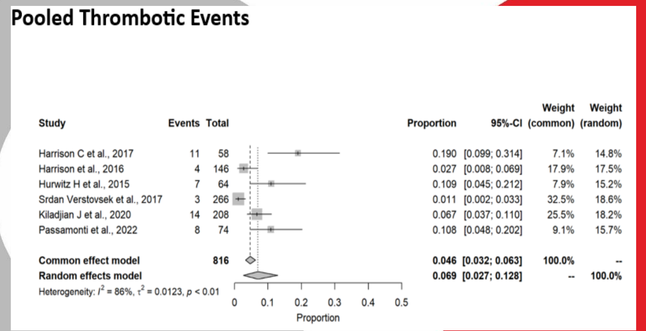
RESULTS

- A total of 816 patients were included for analysis.
- The median age of participants was 63 (34.5-94.5) years and 46.2% were male.
- The median follow-up time was 51.6 (4.4-60) months.
- Most common underlying condition in these patients was myelofibrosis (50.5%, n=412), followed by polycythemia vera (34.6%, n=282), metastatic pancreatic adenocarcinoma (7.8%, n=64), and essential thrombocytopenia (7.1%, n=58).
- The pooled rate of bleeding events was 5.6% (95% CI 0.00-0.17, I =94%, p<0.01, n=606). The pooled rates of grade 1-2 was 10.5% (95% CI 0.00-0.40, I^2=94%, p<0.01, n=132).
- Most common bleeding events were epistaxis and upper GI bleed.
- The median platelet count in this cohort was 475 (205-625) microliters.
- The pooled rate of mortality due to bleeding events was 1.3% (95% CI 0.00-0.04, I =60%, p=0.11, n=474).
- The pooled rate of thrombotic events was 6.9% (95% CI 0.03-0.13, I =86%, p<0.01, n=816).
- Most common thrombotic event was venous thromboembolism.
- The pooled rate of mortality due to thrombotic events was 0.9% (95% CI 0.00-0.02, I =0%, p=0.77, n=412).

Pooled Bleeding Events



Pooled Thrombotic Events



CONCLUSION

Ruxolitinib is effective in treating myeloproliferative disorders, but its association with bleeding and thrombotic complications presents a significant clinical challenge. Further research is essential to gain a deeper understanding and improve management strategies for these adverse effects.

CONTACT INFORMATION

Moazzam Shahzad, MD
H. Lee Moffitt Cancer & Research Institute
Moazzam.Shahzad@moffitt.org