Retrospective Review of Rash and Dermatologic Toxicities from Combination of Allopurinol and Bendamustine

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Introduction

Bendamustine and allopurinol in oncology

- Bendamustine is an alkylating antineoplastic agent used for lymphodepletion prior to CAR-T transplant or is used in combination with rituximab as the primary treatment[1,2]
- Allopurinol is administered around the time of chemotherapy to prevent tumor lysis syndrome (TLS)[1,3]

Dermatological toxicities with bendamustine and allopurinol

- Bendamustine is known to cause severe dermatologic toxicities like Steven Johnson Syndrome, toxic epidermal necrolysis, and rash[1,3]
- Skin toxicities may be more common when bendamustine is administered with allopurinol that is hypothesized to be elicited through T cell lymphocyte activation[3,4,5]
- Febuxostat is used as an alternative to allopurinol for preventing TLS at some institutions to avoid the skin reactions

Methods

Primary Endpoint

- Incidence of rash, Steven Johnson Syndrome (SJS) and toxic epidermal necrolysis (TEN)

Secondary Endpoints

- Treatment related mortality
- Discontinuation of therapy due to rash
- Use of systemic or topical corticosteroids

Design	Retrospective cohort study – chart review
Timeframe	January 2012 – December 2022
Inclusion criteria	• Patients who received at least one dose of bendamustine and two doses of allopurinol concurrently
Exclusion criteria	• Patient did not have follow-up at OHSU • Patients treated as part of a clinical trial

Results

199 Patients Screened

22 Excluded:
- 12 not given allopurinol
- 10 not given bendamustine

177 Patients Included

Table 1: Patient Demographics Summary

Average age (range)	68 years (24-97 years)
Female sex: n (%)	58 (31.9%)
Bendamustine for CAR-T LD: n (%)	53 (29.1%)
Most common allopurinol dose	300 mg
Average # of allopurinol doses per patient	30 doses

Figure 1: Primary Endpoint– Incidence of Rash and Severe Dermatologic Toxicities (N = 177)

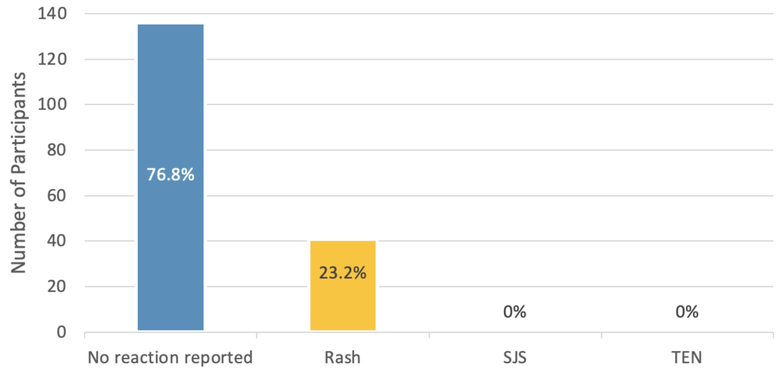
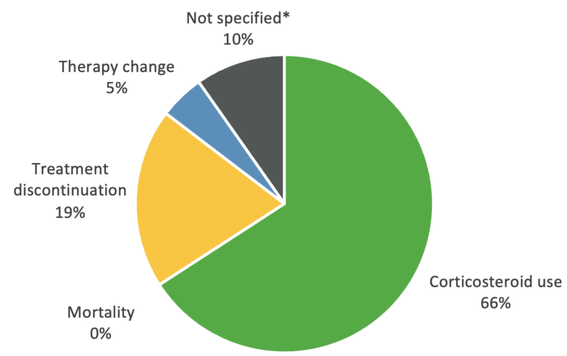


Figure 2: Secondary Endpoints Among Patients with Rash (N = 41)



*Therapy changes or initiation of steroids may have occurred but were not documented in the chart

Discussion

- The incidence of skin reactions occurred at a rate similar to what is expected with bendamustine[3]
- Without any occurrences of SJS or TEN, allopurinol may be an appropriate, more cost-effective alternative to febuxostat for TLS prevention
- Limitations of this study include that it was a retrospective, single-center study without a comparator group
- Further studies are necessary to better understand the risk of skin reactions when treating patients with bendamustine and allopurinol

References

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