Safety Profile of Elotuzumab-Based Regimens in Multiple Myeloma:

A Syetematic Review and Meta-Analysis of Randomized Controlled Trials

[7]Fnu Raja, [2]Kaung Htet Hla Win, [2]Anid Hassan, [6]Momna Nisar, [8]Medhansh Biradar, [6]Imandi Venkata Lakshmi, [7]Unsa Ali

[1]Federal Medical and Dental College, Islamabad, ICT, Pakistan; [9]One Brooklyn Health/Interfaith Medical Center, NYC, NY, USA; [3]Hackensack Meridian Jersey Shore University Medical Center, Neptune, NY, USA; [6]Woodhull medical and mental health center, NYC, NY, USA; [5]All India Institute of Medical Sciences, Raipur, Chhattisgarh, India; [6]All India Institute of Medical Sciences, Raipur, Chhattisgarh, India; [7]Dow Medical College, Karachi, Sindh, Pakistan.

Rajalound@gmail.com

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Background

- Elotuzumab, a monoclonal antibody targeting signaling lymphocytic activation molecule F7 (SLAMF7), has become an important therapeutic option in multiple meyloma (MM), particularly in combination with immunomodulatory agents.
- Although its clinical efficacy has been demonstrated, concerns persist regarding treatment-related toxicities and infectious complications.
- This systematic review and meta-analysis evaluated the safety profile of elotuzumab-containing regimens in patients with newly diagnosed and relapsed/refractory MM.

Methods

- A systematic search of PubMed, EMBASE, Web of Science, and Cochrane CENTRAL was conducted according to PRISMA guidelines.
- Phase II and III randomized controlled trials comparing elotuzumab-based regimens with non-elotuzumab controls in adult MM patients were included.
- Relative risks (RRs) with 95% confidence intervals (CIs) were pooled using fixed- or random-effects models according to heterogeneity.

Results – study overview

6 randomized controlled trials included

1,736 total patients included

847 received elotuzumab-containing therapy

889 received control regimens

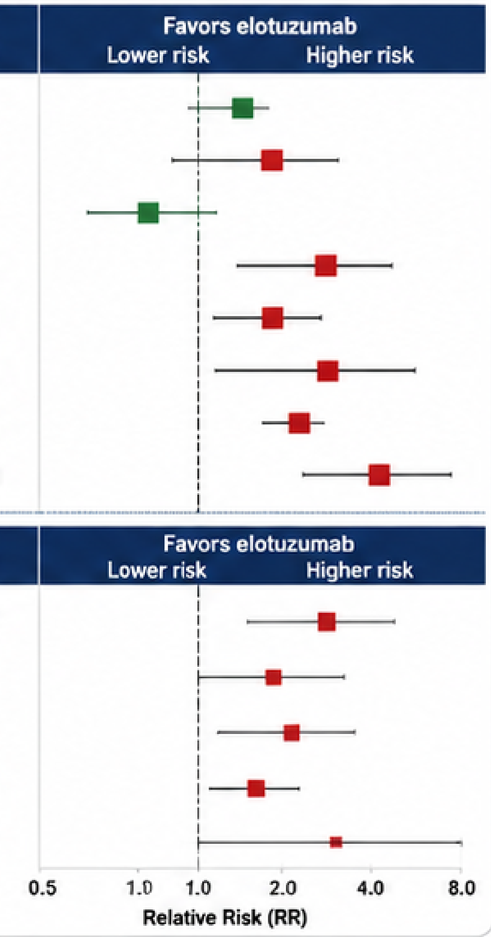
Results – summary of key findings

Overall adverse events	RR=1.00, 95% CI: 0.99–1.01; p=**0.64**	Comparable between groups
Grade 3–4 adverse events	RR=1.06, 95% CI: 0.00–1.26; p=0.69	Numerically higher, not significant
Neutropenia	RR=0.86, 95% CI: 0.76–0.98; p=0.02	Significnatly lower risk
Pneumonia	RR=1.30, 95% CI: 1.07–1.59; p=**0.009**	Higher incidence
Diarrhea	RR=1.16, 95% CI: 1.05–1.30; p=**0.006**	Higher incidence
Pyrexia	RR=1.47, 95% CI: 1.10–1.96; p=**0.010**	Higher incidence
Infections overall	RR=1.09, 95% CI: 1.03–1.15; p=**0.002**	Higher incidence
Hyperglycemia	RR=1.09, 95% CI: 1.28–2.07; p<**0.0001**	Higher incidence

Results – detailed safety outcomes

Outcome adverse events	Relative Risk (RR) (95% CI)	p-value
Overall adverse events	1.00 (0.99–1.01)	0.64
Grade 3–4 adverse events	1.06 (0.90–1.26)	0.69
Neutropenia	0.86 (0.76–0.98)	0.02
Pneumonia	1.30 (1.07–1.59)	0.009
Diarrhea	1.16 (1.05–1.30)	0.006
Pyrexia	1.47 (1.10–1.96)	0.010
Infections overall	1.09 (1.03–1.15)	0.002
Hyperglycemia	1.63 (1.28–2.07)	<0.0001

Grade 3–4 adverse events	Relative Risk (RR) (95% CI)	p-value
Lymphopenia	1.86 (1.31–2.64)	0.0005
Diarrhea	1.47 (1.00–2.16)	0.05
Pneumonia	1.57 (1.11–2.23)	0.01
Infections	1.32 (1.07–1.63)	0.009
Cataracts	2.87 (1.15–7.21)	0.02



Conclusions

Elotuzumab-based regimens demonstrate a generally manageable safety profile in MM. Although treatment is associated with reduced neutropenia risk, increased rates of infectious, gastrin, metabolic, and/or metabolic, and selected sereful adverse events warrant careful monitoring and supportive management during therapy.