Assessing Patient Risk, Benefit, and Outcomes in Drug Development: A Decade of Ramucirumab Clinical Trials

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INTRODUCTION

The burden of oncologic drug development on patients paired with increasing clinical trial failure rates emphasizes the need for reform of drug development. Identifying and addressing patterns of excess burden can guide policy, ensure evidence-based protections for trial participants, and improve medical decision-making. This study aims to evaluate published clinical trials of ramucirumab to assess the risk/benefit profile and burden over time for patients.

METHODS

- On May 25, 2023 a literature search was performed on Pubmed/MEDLINE, Embase, Cochrane CENTRAL, and ClinicalTrials.gov for clinical trials using ramucirumab as monotherapy or in combination with other interventions for cancer treatment
- Authors screened titles and abstracts for potential inclusion in a masked, duplicate fashion. Following data screening, data was extracted in a masked, duplicate fashion
- Trials were classified as positive when meeting their primary endpoint and safety, negative or indeterminate

RESULTS

- Ramucirumab has been tested in over 20 different indications.
- The median change in the randomized controlled trials for OS was 1.5 months and PFS was 1.2 months between the ramucirumab treatment arm and the comparison arm
- There were a total of 10,936 participants and 10,303 adverse events reported, with a spike in adverse events observed in 2014-2015

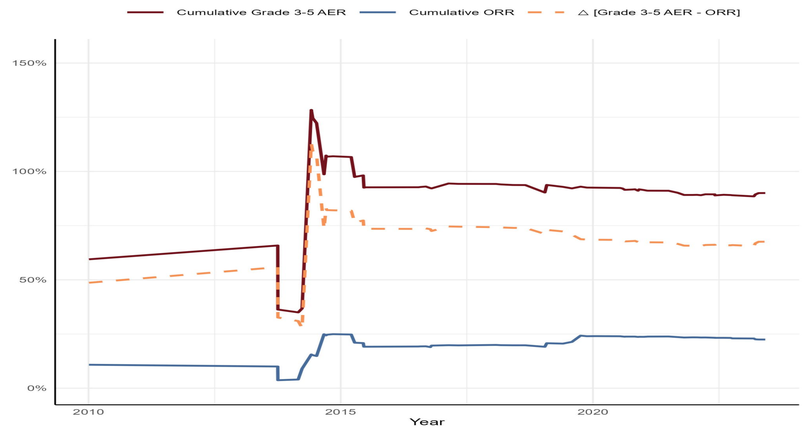

Figure 1: Cumulative adverse event rates per trial-year vs. cumulative ORR per trial-year are plotted over time.

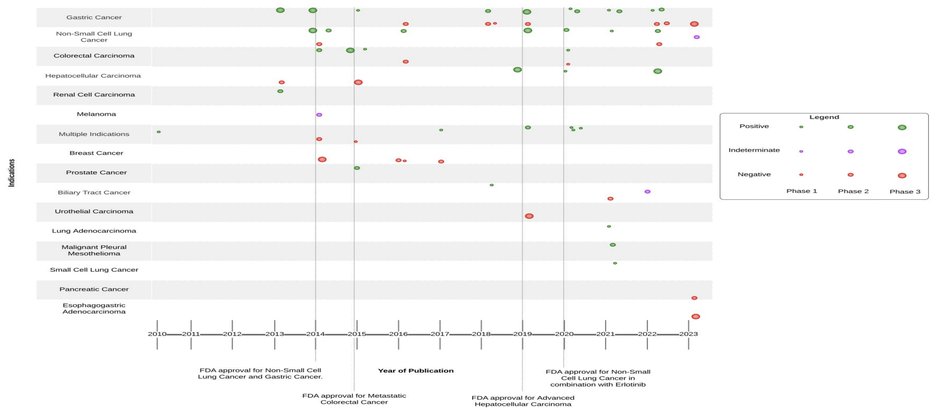

Figure 2: Ramucirumab trials visualized by indication and date of publication.

CONCLUSION

- A concerning number of adverse events were observed across all trials assessed
- Participants in ramucirumab randomized controlled trials saw meager gains in overall survival
- Clinicians should carefully weigh the risks associated with ramucirumab therapy given its toxicity burden and poor survival gains

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REFERENCES