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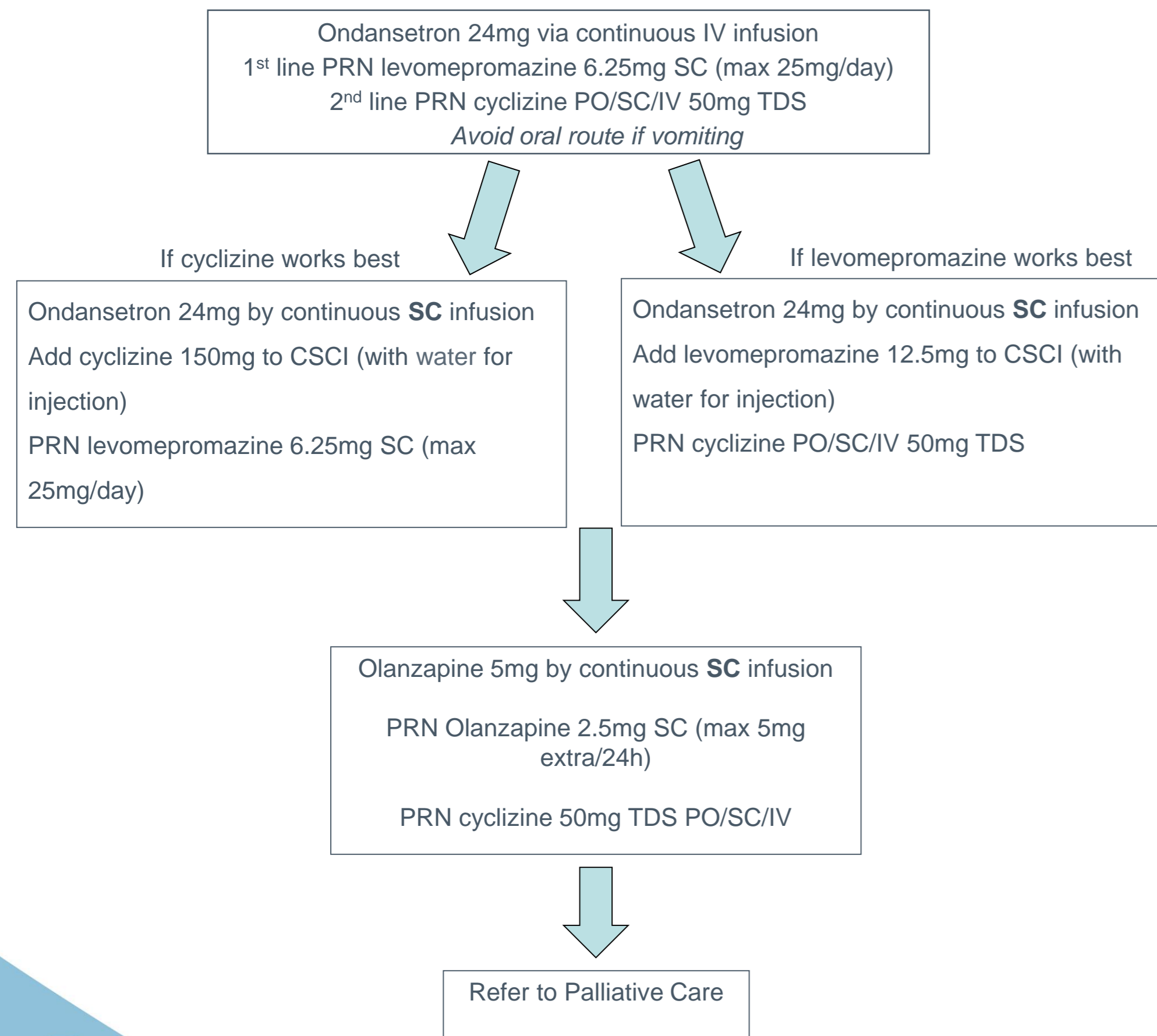
## Introduction

Nausea and vomiting remains a significant cause of morbidity during Haematopoietic stem cell transplantation (HSCT), primarily due to high dose chemotherapy. In our trust, an antiemetic protocol has been developed, reflecting recommendations in MASCC/ ESMO guidelines<sup>1</sup>, including the addition of olanzapine as a second line intervention. The aim of this study is to evaluate the effectiveness of the updated protocol in the management of nausea and vomiting post-stem cell transplant.

## Method

In July 2023, the new protocol was launched and a prospective evaluation of its efficacy was undertaken. Patients receiving stem cell transplant at our centre reported the effectiveness of each line of therapy within the protocol in managing nausea, as quantified using the IPOS scale<sup>2</sup>. An IPOS score of 2 or more for nausea was taken to represent poor control, whereas a score of less than 2 was considered good control. Progression to the next step of the protocol was also classified as poor control. This study spanned between July 2023 to February 2024.

## The protocol



\*If nausea not controlled or requiring 2+ PRNs in 24h

## Results

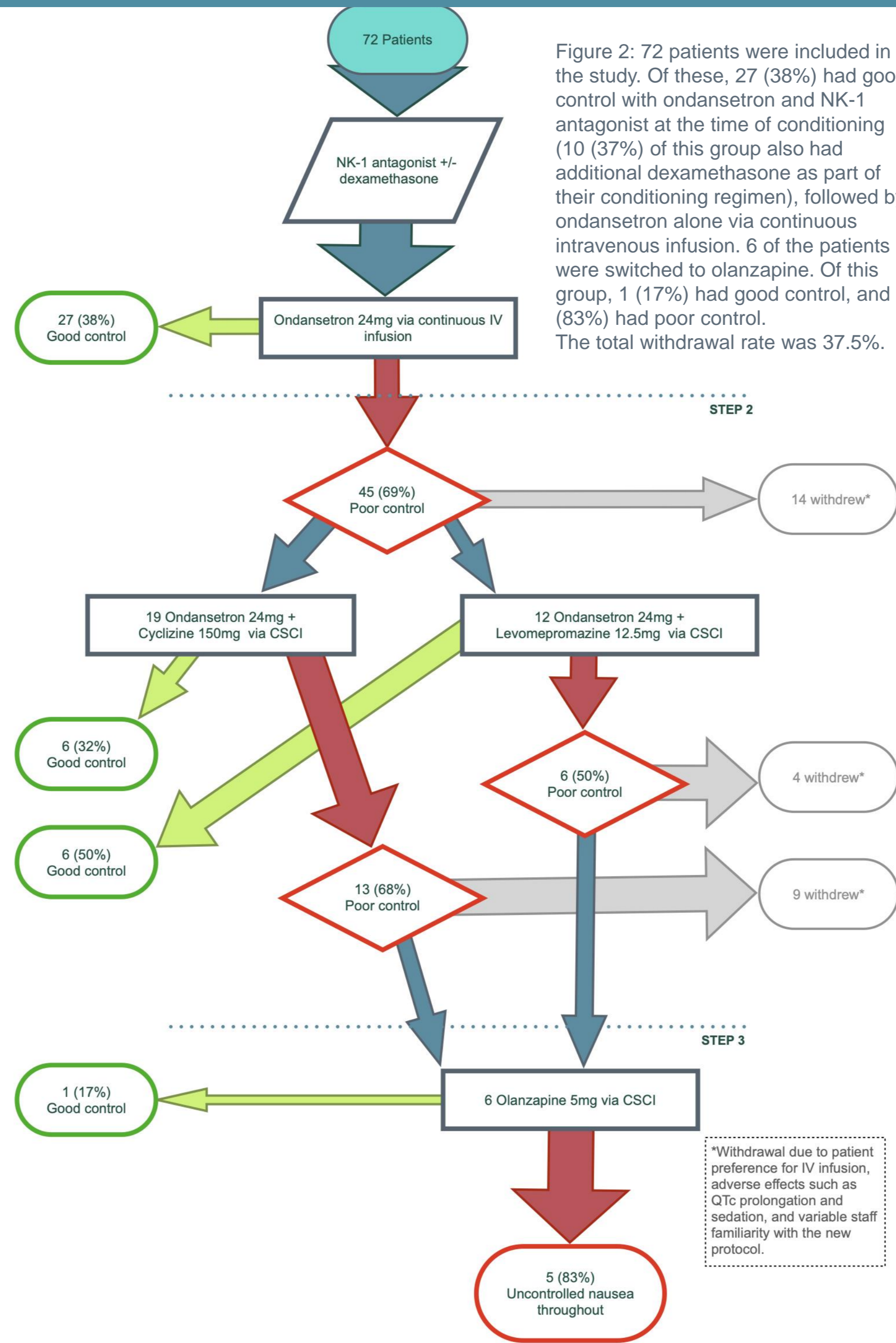


Figure 2: 72 patients were included in the study. Of these, 27 (38%) had good control with ondansetron and NK-1 antagonist at the time of conditioning (10 (37%) of this group also had additional dexamethasone as part of their conditioning regimen), followed by ondansetron alone via continuous intravenous infusion. 6 of the patients were switched to olanzapine. Of this group, 1 (17%) had good control, and 5 (83%) had poor control. The total withdrawal rate was 37.5%.

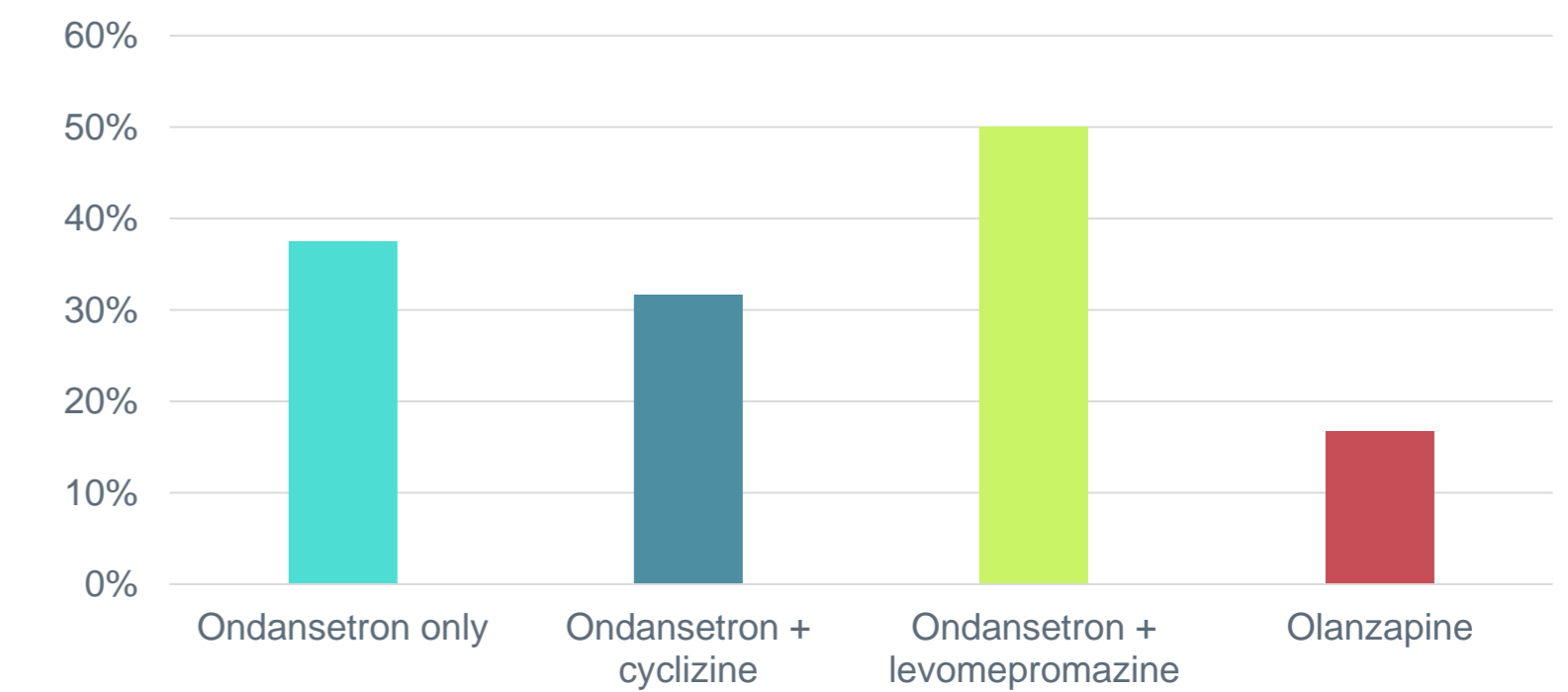


Figure 3: Comparison of anti-emetic regimen, by the percentage of patients who responded with good control, following initial NK-1 antagonist +/- dexamethasone

## Discussion

For the patients that followed the new protocol in entirety, 89% had good control, compared with 38% who had ondansetron alone. This demonstrates an improvement of 57% from the standard practice.

Of the different lines in the protocol, ondansetron and levomepromazine in combination had proportionally the most success.

## Limitations

The primary limitation of this study is the small sample size and moderate dropout rate, which makes it difficult to infer conclusions. As an initial scoping exercise, however, this does suggest that olanzapine may be less successful in this patient population.

## Next Steps

The next edition of this protocol should prioritise the combination of levomepromazine and ondansetron as step 2, with step 3 incorporating either olanzapine monotherapy or ondansetron with cyclizine.

Further research is needed into the use of olanzapine as an anti-emetic for patients undergoing HSCT.

## References

- Rapoport, B.L., Herrstedt, J., Snow, R.C. *et al.* 2023 updated MASCC/ESMO consensus recommendations: prevention of nausea and vomiting following multiple-day chemotherapy, high-dose chemotherapy, and breakthrough nausea and vomiting. *Support Care Cancer* **32**, 36 (2024). <https://doi.org/10.1007/s00520-023-08224-1>
- Hearn, J. and Higginson, I.J. (1999) 'Development and validation of a core outcome measure for palliative care: The Palliative Care Outcome Scale', *Quality and Safety in Health Care*, 8(4), pp. 219–227. doi:10.1136/qshc.8.4.219.