

Describing Palliative Sedation Therapy in Pediatric Oncology Patients: A Potential New Role for Dexmedetomidine

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INTRODUCTION

- Approximately 80% of pediatric patients with incurable cancer are confronted with persistent pain despite the utilization of analgesics².
- 89% of children experience significant suffering during the end-of-life (EOL)⁹.
- Palliative sedation therapy (PST) relieves suffering and provides adequate comfort in terminally ill patients who have exhausted other sedative alternatives¹.
- Literature on propofol^{2,4,5,8} and dexmedetomidine pediatric PST is insufficient.
- No data focusing on the relationship between the clinical characteristics, demographics, and disease burden of pediatric oncology patients and the extent of such sedative measures required to relieve suffering currently exists.
- This is the first study reporting on a large cohort of pediatric oncology patients receiving PST.

HYPOTHESIS

Dexmedetomidine prevents escalation to propofol at the EOL, yielding an enhanced pediatric PST algorithm.

METHODS

- Retrospective chart review of patients with any oncological diagnosis treated at SJRCH between April 1, 2011, and January 1, 2021.
- Included patients were those treated at SJCRH with a confirmed cancer diagnosis, aged ≤ 25 years who passed away after receiving PST consisting of propofol and/or dexmedetomidine at the EOL.
- Variables were collected around general demographics, disease characteristics, clinical characteristics, and medication use.
- Descriptive statistics and frequency tables were utilized for participant data analysis. The analyses were carried out using SAS statistical software.

RESULTS

- PST was most often used in solid tumor clinic but parsing for oncological diagnosis demonstrated that PST in leukemia patients composed the highest percentage of our patient cohort (38%).
- Patients who were only administered dexmedetomidine required, on average, fewer number of palliative medications and opioids during EOL.
- Findings were not influenced by race, BMT status, gender, or cancer diagnosis.
- Utilization of dexmedetomidine provided adequate relief of suffering and prevented escalation to propofol thereby providing comfort without compromising arousability.

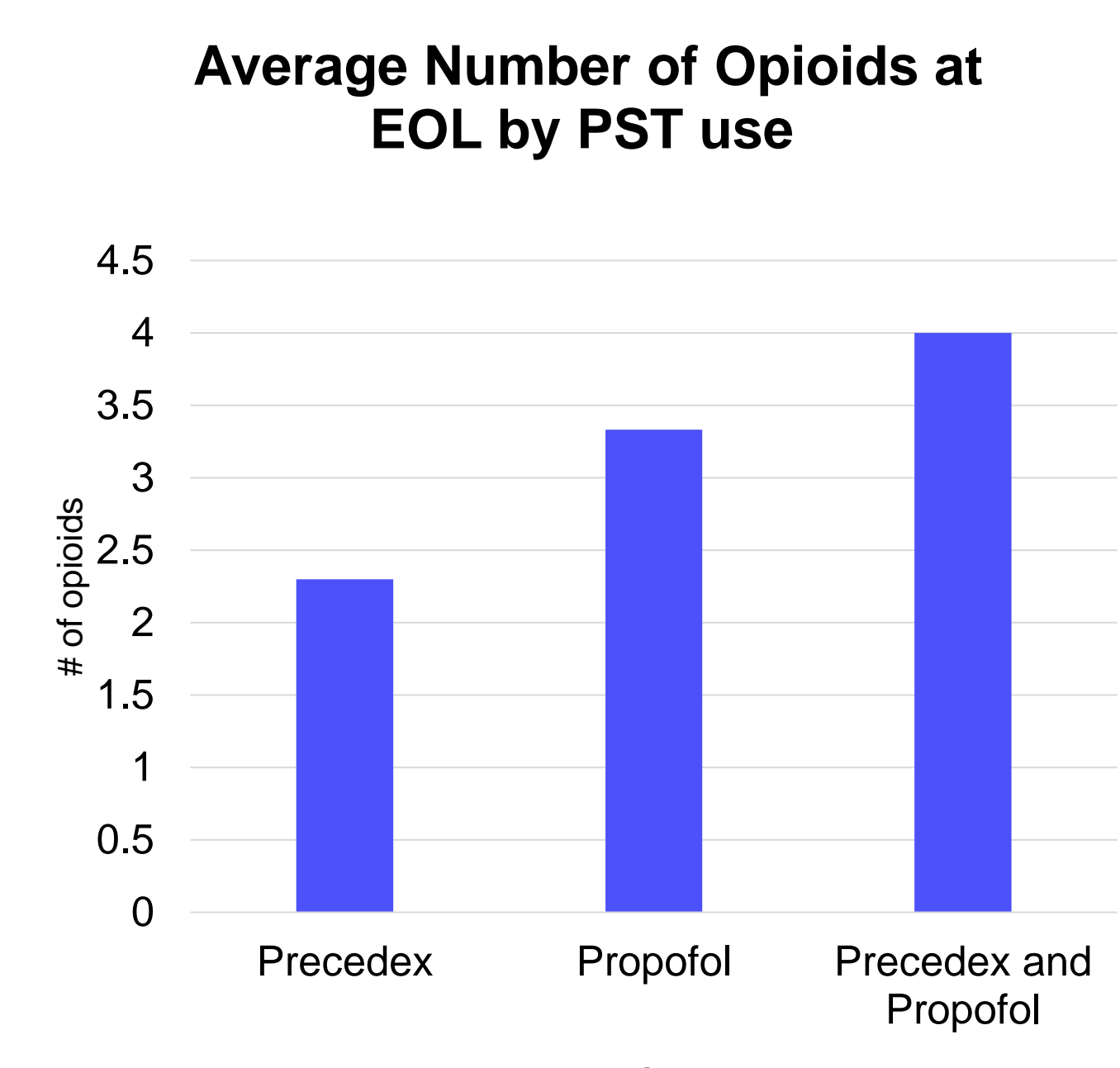
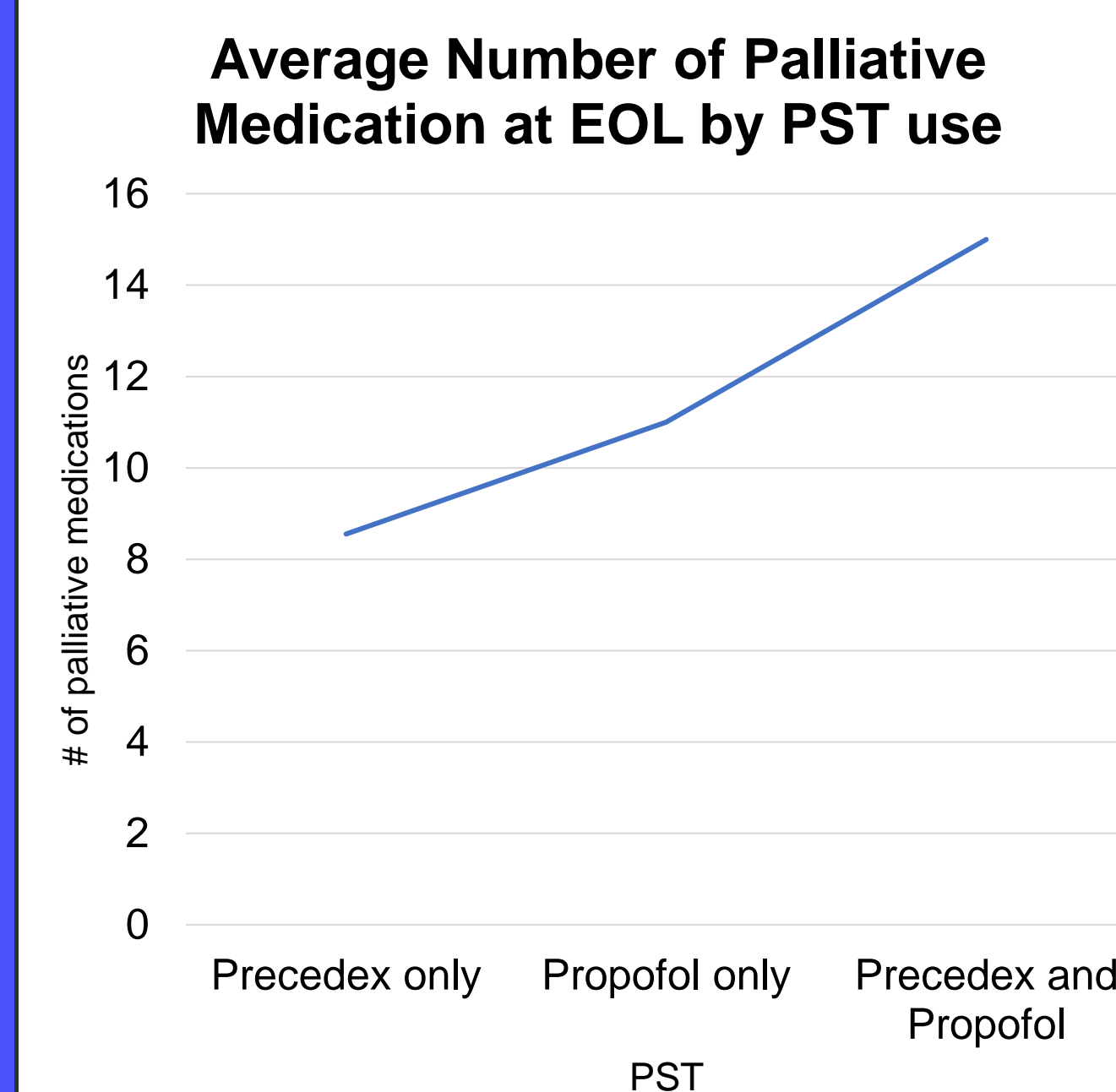
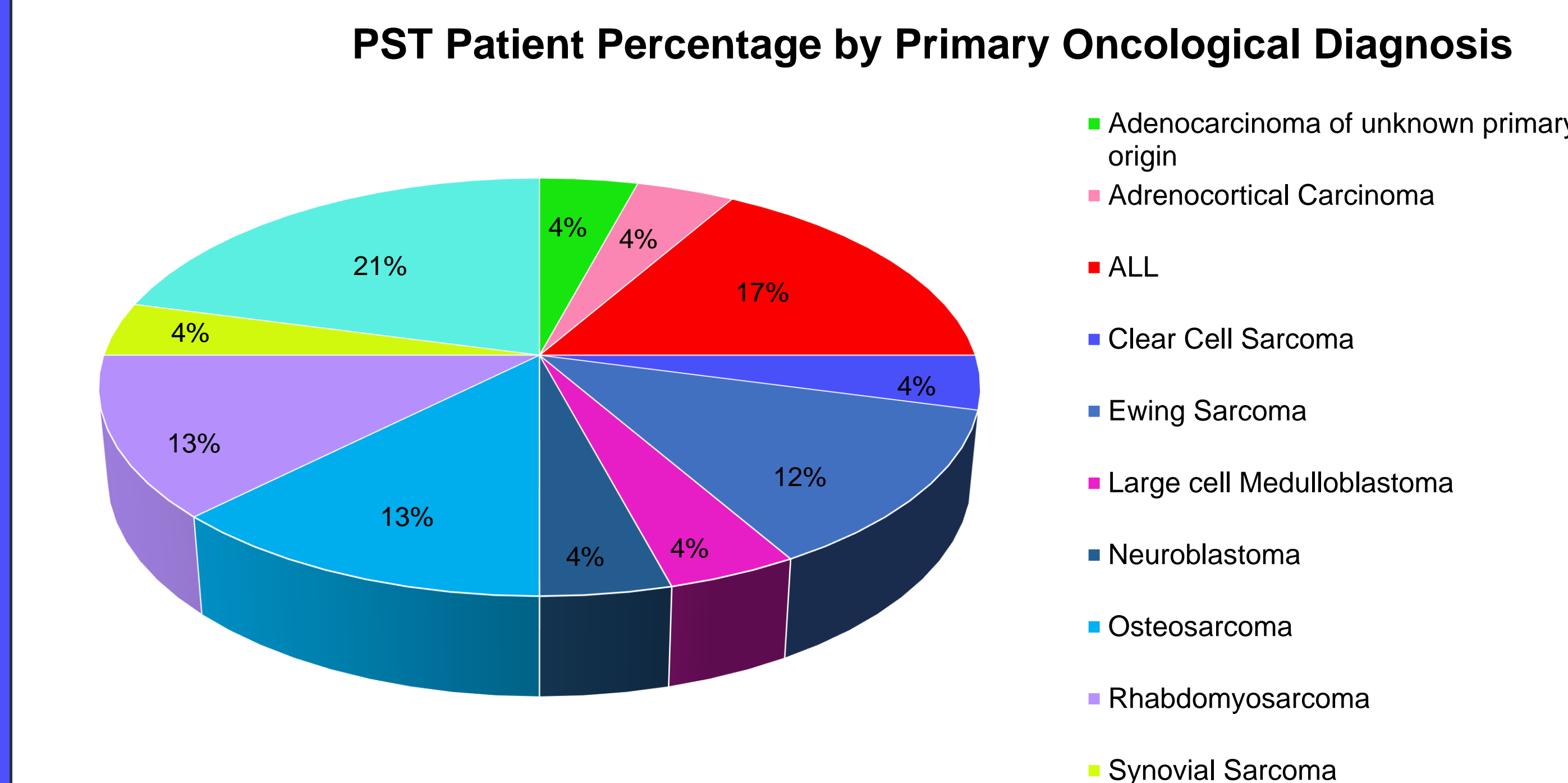
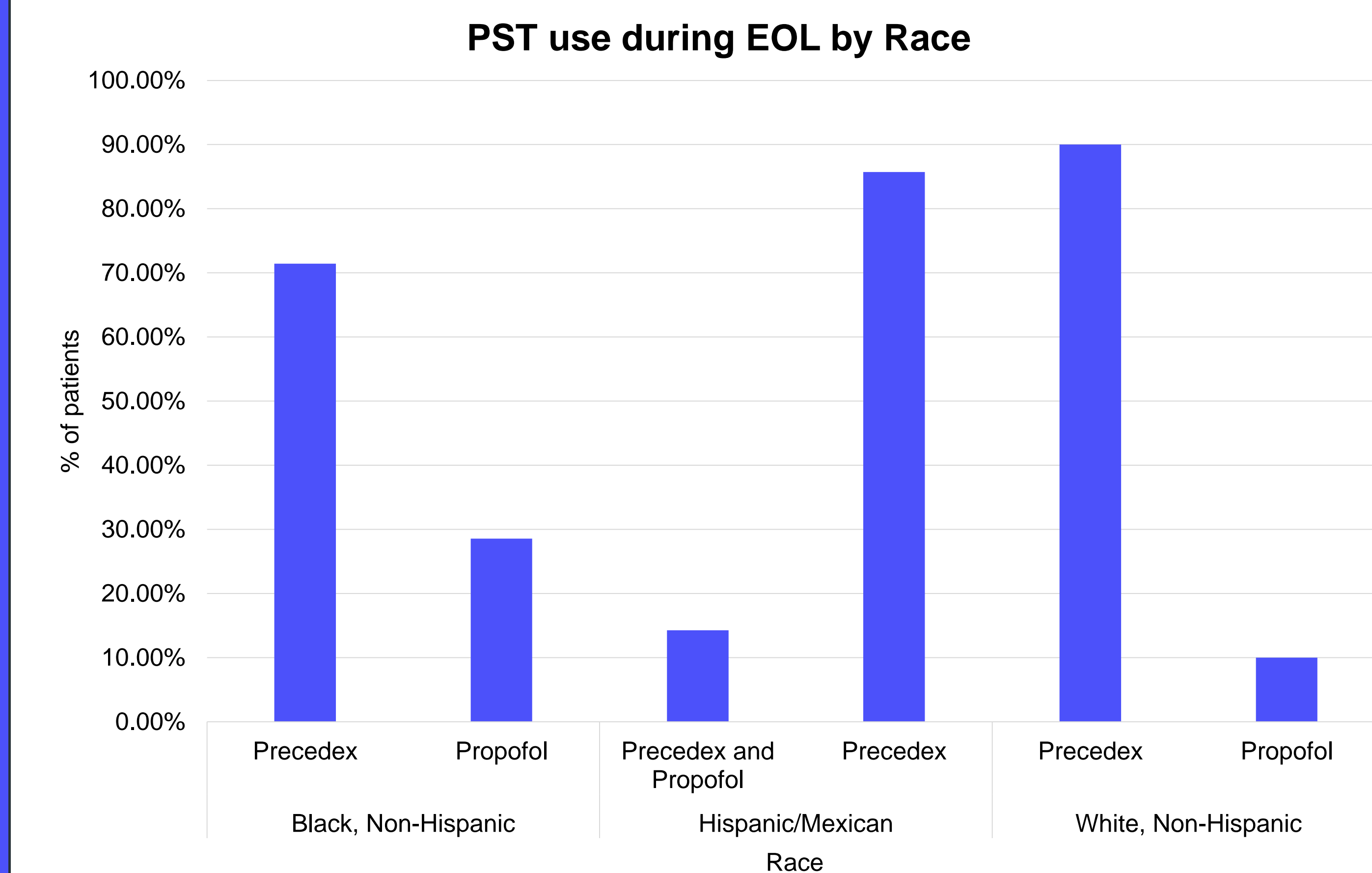
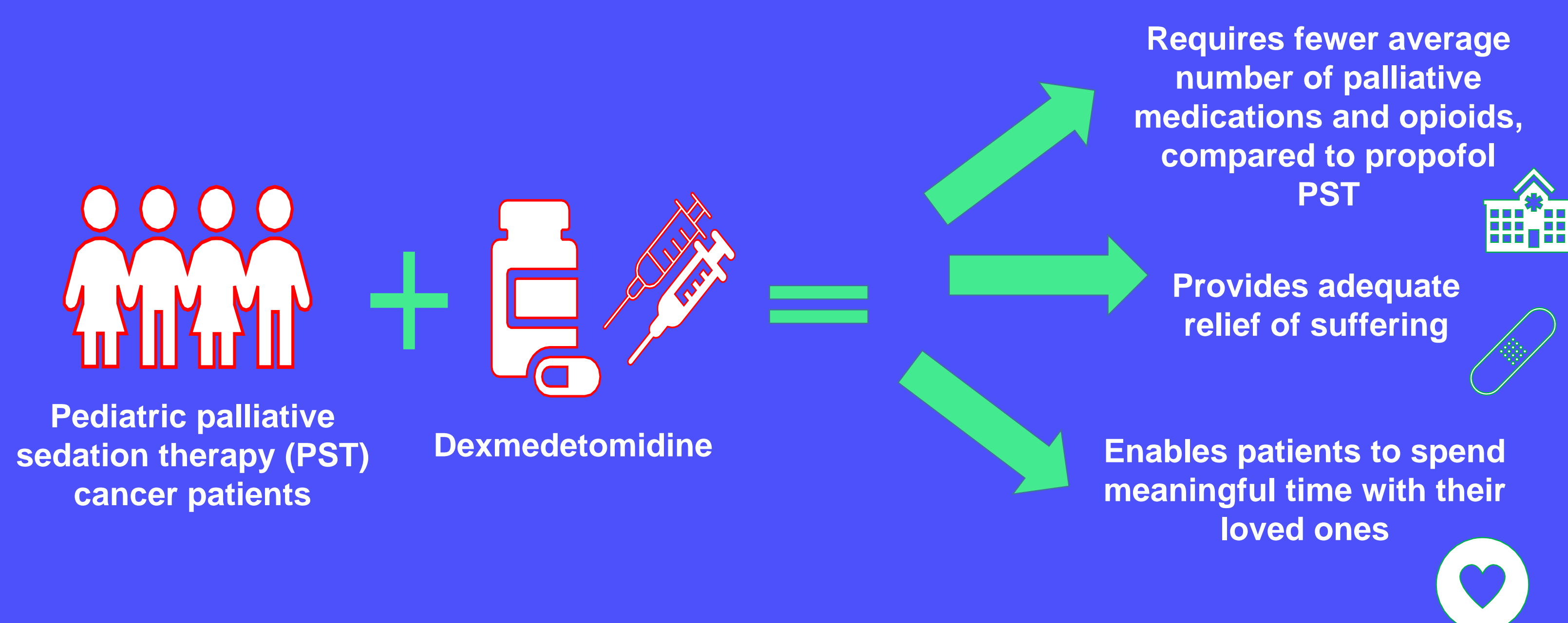
CONCLUSIONS

- Integrating dexmedetomidine into national pediatric PST clinical guidelines has the potential to provide effective symptom management without compromising arousability, enabling pediatric cancer patients to spend meaningful time with their loved ones at the EOL.

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Integrating Dexmedetomidine into palliative sedation therapy relieves suffering, maintains arousability, and enables pediatric cancer patients to spend meaningful time with their loved ones at the end of life.



| Disease Characteristics | Number of patients (%) (n=24) | Clinical Characteristics | Number of patients (%) (n=24) |
|------------------------------|-------------------------------|---------------------------------|-------------------------------|
| Symptoms at EOL- n, % | | Care Coordination - n, % | |
| Pain | 23 (96%) | Hospice | 19 (79%) |
| Respiratory distress | 23 (96%) | Pain Team Consult | 15 (63%) |
| Anxiety/Agitation | 20 (83%) | Average number of QOLA visits | 34 |
| Supplemental O ₂ | 21 (88%) | POST | 23 (96%) |
| Reason for PST- n, % | | Passed away in ICU | 8 (33%) |
| Pain | 21 (88%) | | |
| Respiratory distress | 10 (42%) | | |
| Anxiety/Agitation | 9 (38%) | | |
| Delirium | 3 (13%) | | |