

Introduction

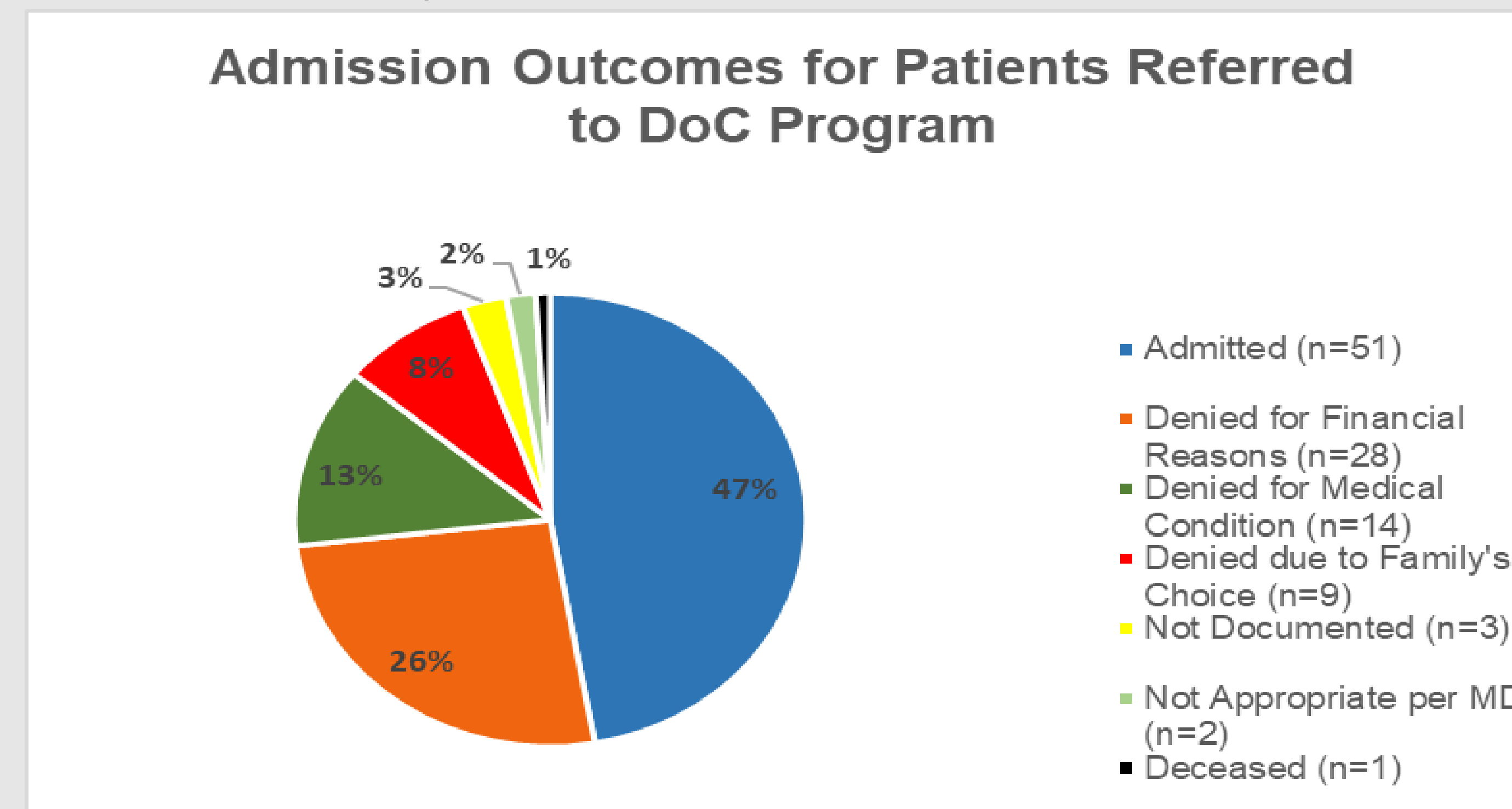
- Disorders of Consciousness (DoC) are neurological conditions that are characterized by alterations in the level of consciousness, which result in the limitation of one's ability to communicate and participate in self-care.
- The literature supports the goal of early, comprehensive rehabilitation and intervention in the acute care hospital and inpatient rehabilitation units to improve patient outcomes and optimize quality of life with delays in these opportunities resulting in worsening of these metrics.¹
- DoC programs incorporate a multi-disciplinary approach to patient care with a focus on appropriately assessing the level of consciousness, treating reversible etiologies, facilitating the patient's arousal and awareness, with goals to improve functional communication, environmental control, and quality of life.¹⁻⁵

Materials & Methods

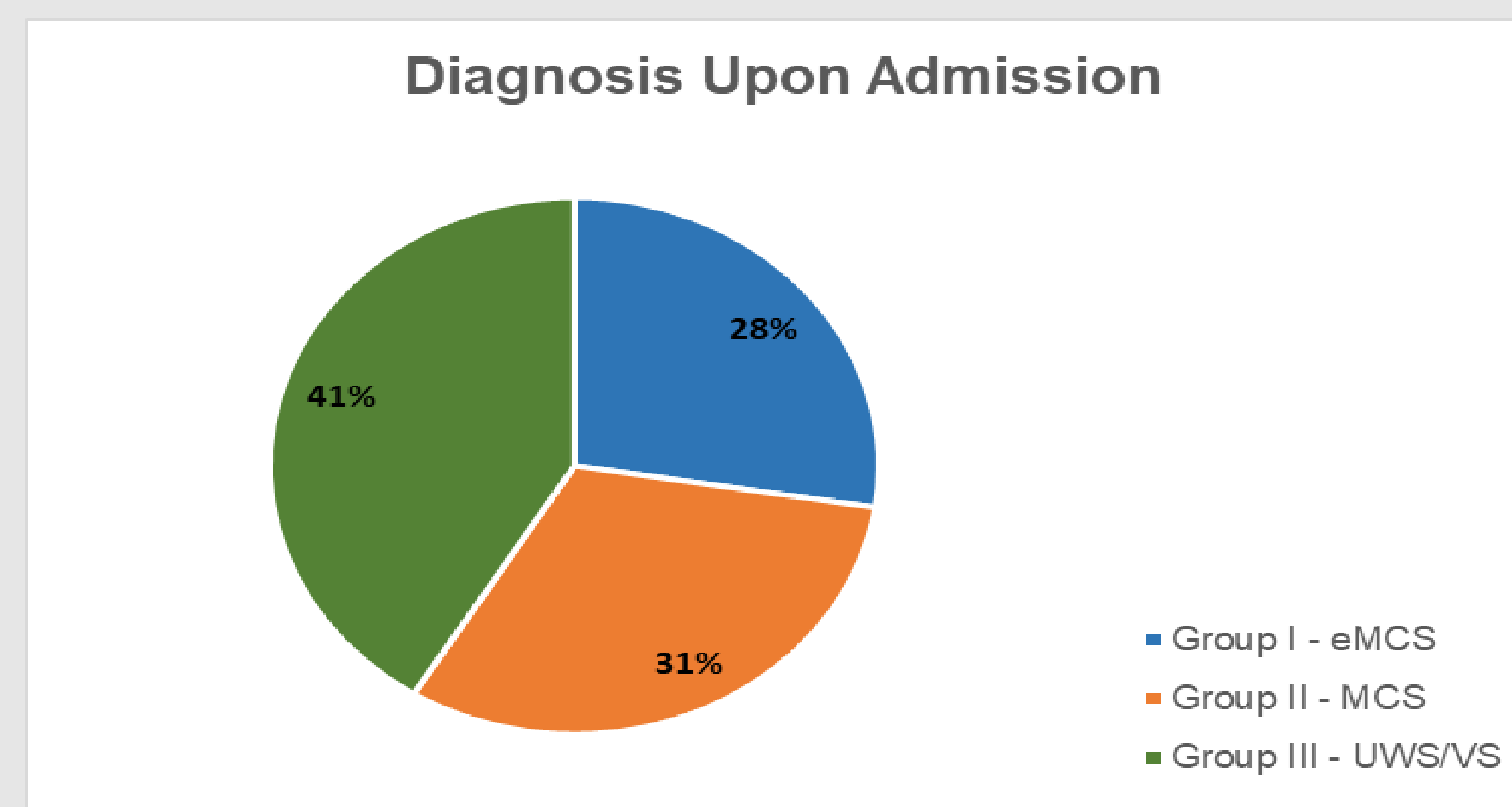
- This study was a single-institution retrospective chart review studying brain injury patients referred to an inpatient Disorders of Consciousness rehabilitation program in 2017. Of the patients referred to the inpatient DoC program, patients were assessed on whether or not they were admitted. If the patient was denied inpatient admission to the program, they were assessed for denial reasons.
- Of patients admitted to inpatient DoC program, baseline characteristics of patient were obtained using the electronic health record which included gender, date of birth, date of injury, age, date of referral, days after referral patient was admitted, date of admission, history of prior admission, and etiology of injury. Patient's were assessed clinically upon admission and in 3-4 day intervals throughout their inpatient stay, until discharge. Each clinical assessment was recorded by incorporating the use of the Coma Recovery Score – Revised (CRS-R), where total score, arousal scale, communication scale, oromotor/verbal function scale, motor function scale, visual function scale, and auditory function scale was recorded. Based on the patient's CRS-R score, patients were then determined to be in one of the following 3 states – emerged from minimally conscious state (eMCS), minimally conscious state, unresponsive wakefulness syndrome/vegetative state (UWS/Vs). Emerged from minimally conscious state was achieved once a patient displayed functional communication (CRS-R Communication score of 2) or functional object use (CRS-R Motor score of 6).
- Descriptive analyses were performed to compare our variables of interest. Means, standard deviations, medians, counts, and percentages were calculated as appropriate. Totals and frequencies were used to report categorical data. Variables of interest with normal distributions were compared using two-sample unpaired t tests.

Results

- 51 new patients were admitted for DoC rehabilitation.
- 52.8% (57/108) of referrals were denied with financial barriers (49.1%, 28/57), medical conditions (24.6%, 14/57), and family's choice (15.8%, 9/57) being the primary reasons for denial. "Denied for Medical Condition" include medically unstable, pending procedure/surgery, and requiring ventilator management. Of the two "Not Appropriate per MD" patients, one patient had "no attainable goal" and the other was "recommended SNF placement".



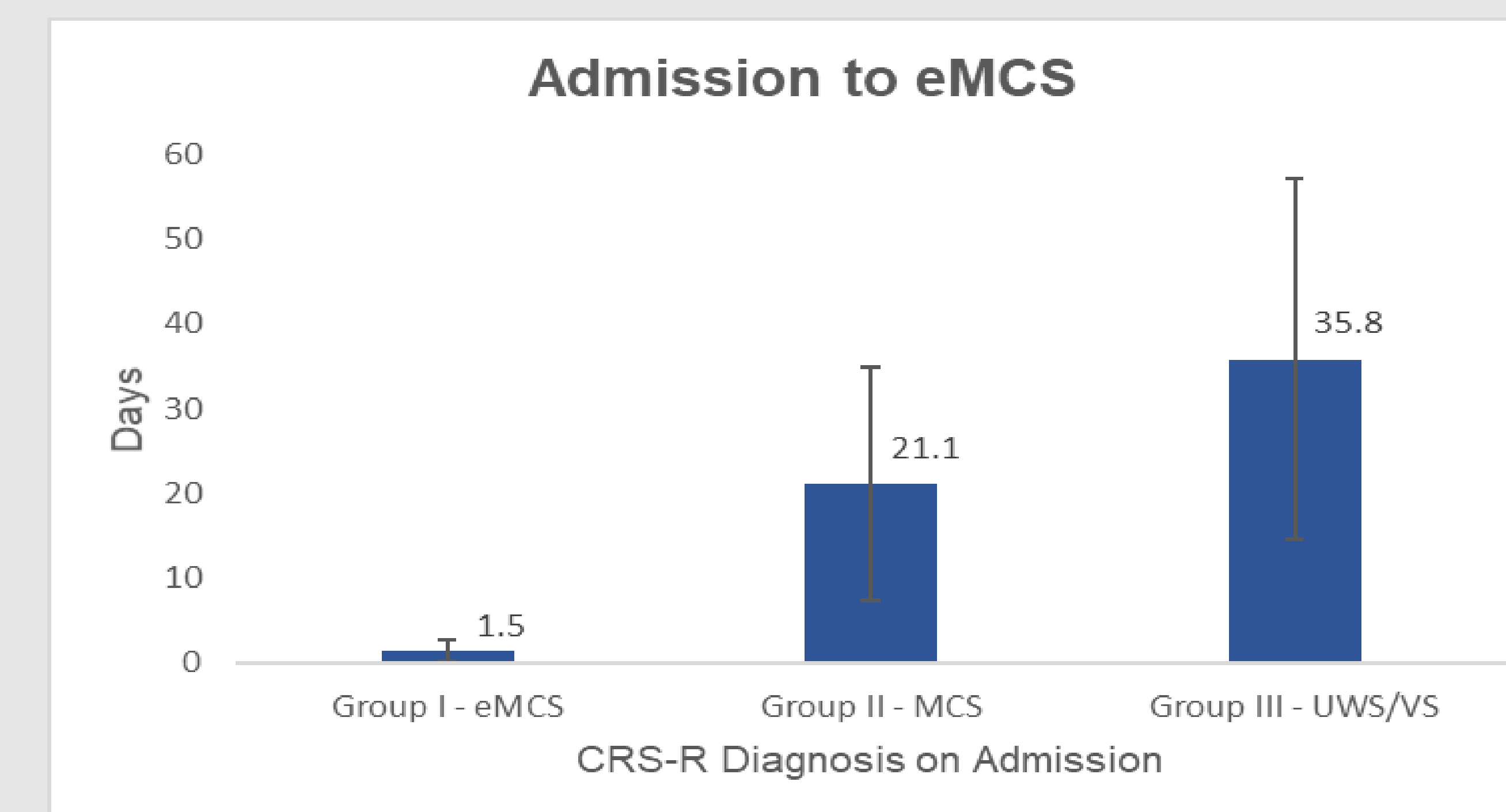
- 51 new patients were admitted for DoC rehabilitation. 27.5% (14/51) were fully conscious on first evaluation (Group I, misdiagnosed); 31.4% (16/51) were found in minimally conscious state (Group II, MCS); 41.2% (21/51) were found in unresponsive wakefulness syndrome/vegetative state (Group III, UWS/Vs).



- In total, 70.3% (26/37) of "true" DoC patients eventually emerged. Among all emerged patients, 45.0% (18/40) emerged within one week, 82.5% (33/40) within 1 month, and 100.0% (40/40) within 3 months.

Results cont.

- Patients in group I demonstrated functional communication or functional object use within 1.5 ± 1.2 days of admission. In Group II, 100.0% (16/16) patients emerged by discharge within 21.1 ± 13.8 days. In Group III, 47.6% (10/21) of patients emerged by discharge within 35.8 ± 21.3 days. Of the remaining 11 patients, 3 reached MCS status by discharge. (If you may add SD on the graph)



Conclusions

- Due to a variety of external factors, over half of patients initially referred to the DoC program were denied admission. One of the primary reasons were related to financial barriers.
- More than a quarter of patients admitted to the DoC program were found fully conscious and initially mislabeled as "DoC" from outside hospital. The rate of potential misdiagnosis was persistently alarming (~30%).
- 70% of "true" DoC patients emerged with appropriate management. Our data shows MCS patients have an extremely high likelihood of emergence and further recovery, which was consistent with current understanding, necessitating care.
- Acute inpatient rehabilitation is a pivotal phase of the recovery process for DoC as proven consciousness opens up more opportunities for continued rehabilitation for meaningful recovery, which otherwise may not have been available due to prematurely presumed futility of it. We strongly advocate such rehabilitation services being offered to all patients with brain injuries raising clinical concern of DoC.

Sources

