|  |  |
| --- | --- |
|  | Study population N (%) |
| Demographics  Age, years, mean (SD) | 13.5 (5.2) |
| Gender,  Male  Female  Genotype,  Hemoglobin SS  Hemoglobin SC  HbS-ß0 thalassemia  HbS- ß+ thalassemia | 328 (51)  289 (49)  488 (79.1)  104 (16.9)  5 (0.8)  20 (3.3) |
| Treatment  Hydroxyurea use | 336 (46.7) |
| Chronic transfusion dependence | 36 (5.8) |
| Admission labs |  |
| Hemoglobin, mean (SD) | 9.3 (1.7) |
| Reticulocyte count, mean (SD) | 11.3 (6.8) |
| White blood cell count, mean (SD)  Nucleated red blood cells, mean (SD)  Hospitalization characteristics  Hospital length of stay in days, mean (SD)  IV fluid volume over admission (ml/kg/day), mean (SD)  IV fluid volume over first 3 days of admission (ml/kg/day), mean (SD)  IV fluid volume in first 24 hours (ml/kg), mean (SD)  Blood transfusion during hospitalization  Clinical outcomes  Acute chest syndrome  Any time during hospitalization  On admission  Oxygen requirement  PICU transfer  Readmission within 28 days | 12.2 (5.6)  6.5 (15.6)  5.7 (3.9)  49.9 (20.3)  139.6 (57.8)  35.7 (25.1)  106 (17.2)  141 (22.9)  86 (13.9)  131 (21.2)  15 (2.4)  121 (19.7) |
|  |  |

TABLE 1: Patient and Hospitalization Characteristics in patients with SCD with VOE, N = 617 encounters (161 patients)

SCD, sickle cell disease; VOE, vaso-occlusive episode; PICU, pediatric intensive care unit

TABLE 2: Multivariate Linear Regression analysis of treatment- and patient-related characteristics for HLOS in all hospital admissions, N = 531 (excluded ACS on admission, N = 86)

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Estimate** | **95% Confidence Limits** | **P-value** |
| Oxygen Requirement | 0.0475 | -0.083 – 0.692 | 0.475 |
| PICU Transfer | 0.4836 | 0.106 – 0.692 | **< 0.001\*** |
| Readmission | 0.1126 | 0.008 – 0.217 | **0.035\*** |
| History of Chronic Pain | 0.3346 | 0.231 – 0.438 | **< 0.001\*** |
| Hydroxyurea Use | 0.1906 | 0.088 – 0.293 | **< 0.001\*** |
| Transfusion | 0.5116 | 0.393 – 0.630 | **< 0.001\*** |

HLOS, hospital length of stay; ACS, acute Chest Syndrome; PICU, pediatric intensive care unit

Table 3: Multivariable Logistic Regression analysis of adverse events related to IVF therapy and treatment- and patient-related characteristics

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Parameter** | **OR** | **95% Confidence Limits** |
| **A: Development of ACS** | | | |
|  | IVF Therapy | 0.90 | 0.32 – 2.54 |
| Oxygen Requirement | 12.0 | 5.79 – 24.88 |
| PICU Transfer | 4.17 | 0.47 – 36.89 |
| Transfusion | 4.61 | 2.15 – 9.85 |
| **B: Transfer to the PICU** | | | |
|  | IVF Therapy | 0.98 | 0.14 – 7.10 |
| History of Chronic Pain | 0.15 | 0.02– 1.36 |
| Readmission | 1.18 | 0.13– 11.0 |
| **C: Readmission within 28 days** | | | |
|  | IVF Therapy | 1.51 | 0.75 – 3.10 |
| Oxygen Requirement | 0.75 | 0.39 – 1.50 |
| PICU Transfer | 1.18 | 0.12 – 11.33 |
| History of Chronic Pain | 6.43 | 3.93 – 10.52 |

ACS, acute chest syndrome; PICU, pediatric intensive care unit; IVF, intravenous fluid therapy