

Economic burden of inpatient post-admission dehydration – retrospective database analysis in the United States

Elizabeth Pash, M.S., R.D., L.D.N.; Lobat Hashemi; Niraj Parikh, Covidien, USA

RESEARCH OBJECTIVE: The objective of this study was to compare costs and resource utilization for adult patients experiencing post-admission dehydration (PAD) with those for adult patients who do not experience PAD.

METHODS

Database:

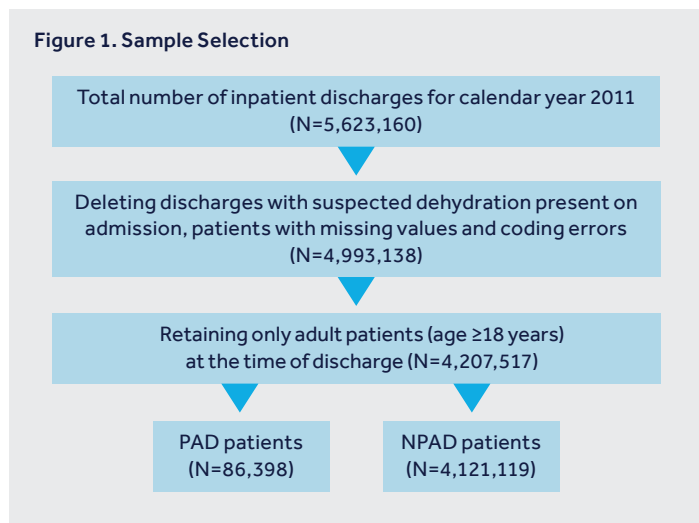
Premier Data – The largest hospital-based database in the United States providing detailed resource utilization and cost data.

Study time frame:

Calendar year 2011

Selection criteria:

All adult inpatient discharges excluding those with suspected dehydration present on admission (ICD-9-CM codes for dehydration: 276.0, 276.1, 276.5X). See sample selection flow-chart in Figure 1.



Statistical analysis:

PAD and no-PAD (NPAD) groups were matched on propensity score adjusting for demographics (age, gender, race, medical, elective patients), patient severity (APR-DRG severity scores) and hospital characteristics (geographic location, bed-size, teaching and urban hospital). Costs (total and departmental), length of stay in hospital (LOS) and incidence of mortality and catheter-associated urinary tract infection (CAUTI) [ICD-9-CM code: 996.64] were compared between groups using t-test for continuous variables and chi-squared test for categorical variables.

Subgroup analysis:

Subgroups of medical and surgical populations were also matched and analyzed separately.

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15 Hampshire Street
Mansfield, MA 02048

800.962.9888
508.261.8000

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RESULTS

All patients:

After matching, 86,398 pairs were identified.

Economic outcomes:

- Mean total costs were significantly higher for the PAD group compared with the NPAD group (\$33,945 versus \$22,380, $p < 0.0001$).
- Mean costs associated with room and board, central supply, surgery, pharmacy and other miscellaneous departments were also significantly higher for the PAD group (all $p < 0.0001$).

Clinical outcomes:

- Compared with the NPAD group, the PAD group had higher mean LOS (12.9 days versus 8.2 days, $p < 0.001$).
- The PAD group also had a higher incidence of CAUTI (0.6% versus 0.5%) and in-hospital mortality (8.6% versus 7.8%) (both $p < 0.05$).

Subgroup analysis:

- 50.2% of PAD patients were surgical patients.
- The results for subgroup analysis were also significant for total costs (medical patients: \$22,065 versus \$15,700; surgical patients: \$45,728 versus \$32,091) and LOS (medical patients: 11.4 days versus 8.3 days; surgical patients: 14.3 days versus 11.4 days) (all $p < 0.05$).

Figure 2a. Total Hospital Cost — PAD vs. NPAD

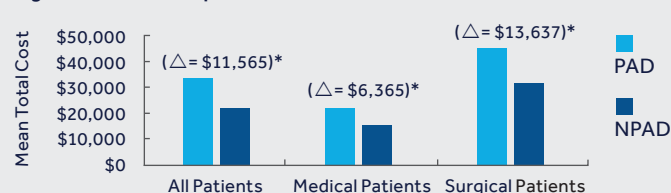
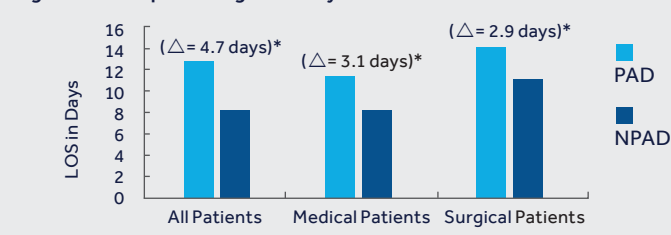


Figure 2b. Hospital Length of Stay (LOS) — PAD vs. NPAD



CONCLUSION:

- PAD has a potential to add significant burden to hospital costs and resources.
- Adopting strategies aimed at avoiding PAD may help in reducing hospital cost and resource burden and may improve patient outcomes.

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