Analysis of Factors Associated With 30-Day Readmission in Hand Surgery Inpatients

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Background

- Hospital readmissions in surgical patients produce a substantial cost burden to the healthcare system.
- There are many factors associated with increased rates of readmission.
- Since the Affordable Care Act instituted the Hospital Readmissions Reduction Program in 2012, hospitals have been penalized for high readmission rates.
- We present a retrospective study evaluating factors associated with readmission in the inpatient hand surgery population.

Methods

- A retrospective chart review was performed on 543 patients that were admitted to the hospital for hand trauma or hand infection from January 1, 2015 to December 31, 2019.
- Data were collected on various patient and admission factors.
- A multivariate analysis was performed to identify which factors were associated with hospital readmission within 30 days.

Figure 1

Characteristic	Significance
Age	0.266
Gender	0.099
Insurance Status	0.067
Current or Former Smoker	<0.001*
Alcohol Use	<0.001*
IVDU	<0.001*
Homeless	<0.001*
COPD	0.022*
Diabetes	< 0.001*
Hypertension	< 0.001*
CAD	0.096
Steroid Use	0.007*
Dialysis	0.018*
Anemia	< 0.001*
CHF	0.425
HIV	0.026*
Hep C	0.045*
Malnutrition	0.116
Psychiatric Diagnosis	0.065

Figure 1. Multivariable regression analysis of characteristics associated with readmission to the hospital within 30 days in the hand surgery population. Significant factors are defined as those with a $p < 0.05$ and are denoted with an asterisk.

Results

- A multivariable regression analysis showed that a history of smoking ($p < 0.001$), alcohol use ($p < 0.001$), intravenous drug use (IVDU) ($p < 0.001$), homelessness ($p < 0.001$), COPD ($p = 0.022$), diabetes ($p < 0.001$), hypertension ($p < 0.001$), steroid use ($p = 0.007$), dialysis ($p = 0.018$), anemia ($p < 0.001$), HIV ($p = 0.026$), and Hepatitis C ($p < 0.001$) were significantly associated with readmission to the hospital within 30 days in the hand surgery population.

Conclusions

- Smoking history, alcohol use, intravenous drug use, homelessness, COPD, diabetes, hypertension, steroid use, dialysis, anemia, HIV, and Hepatitis C infection are associated with increased rates of readmission in patients undergoing bedside or operative procedures of the hand.
- Further investigation identifying at-risk populations and implementing targeted interventions to reduce their risk of readmission could improve patient outcomes and minimize financial burden for health-care systems.