Days alive and out of hospital within 90 days after fast-track total hip and knee arthroplasty

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Background and Goal of study: Days alive and out of hospital (DAOH) has been proposed as an alternative pragmatic outcome measure for medical¹, and perioperative outcome studies². However, the lack of procedure specific data and standardized perioperative care may hinder interpretation. The goal of this study was to investigate DAOH within 90-days after fast-track total hip (THA) and knee arthroplasty (TKA)

Methods: Cohort study in 8 centers from 2012-2015 with prospective data on preoperative characteristics and complete follow-up on length of hospital stay (LOS) and 90-days readmissions/mortality using the Danish National Patient Registry. LOS was calculated as postoperative nights in hospital. Readmissions were included if related to the surgical procedure and counted as days in hospital, excluding emergency room/outpatient visits. High-risk patients were defined according to a previously published definition based on preoperative characteristics.³

Table 1. Fractions of patients according to DAOH

	DAOH 0-10	DAOH 0-45	DAOH 0-60	DAOH 0-80
all patients (n:16137)	0.1%	0.4%	0.7%	3.9%
high-risk patients ¹ (n: 2889)	0.3%*	1.0%**	1.5%**	9.2%**
low-risk patients (n:12633)	0.1%	0.3%	0.5%	2.7%

¹≥2 of the following preoperative characteristics: age ≥80 years, use of walking aids, anemia, pulmonary disease, psychiatric disorder, anticoagulant therapy³. DAOH: days alive and out of hospital. *p=0.001 **p<0.001 vs. low-risk patients.

Results: Of 16137 procedures, 2889 (19%, range 12-23% between departments) were in high-risk and 12633 (81%) in low-risk patients, (615 patients excluded due to missing data.) Median LOS was 2 days (IQR 2-3), 90-days readmissions were 8.2% and all-cause mortality was 0.3%. The median DAOH was 88 days (IQR 87-88) and >96 % of patients had DAOH between 81 and 90 days. The fraction with DAOH 81-90 was higher (90.8% vs. 97.3%) in high vs. low-risk patients (p<0.001), as was the fraction with DAOH ≤10, ≤45, ≤60 and ≤80.(table 1 and fig. 1)

CONCLUSION: High-risk patients had fewer DAOH. However, the clinical relevance of 90-days DAOH as a pragmatic outcome measure may be limited in fast-track THA and TKA.

Discussion: High-risk patients had fewer DAOH. However, in contrast to a study in mixed procedures measuring 30 days DAOH [2], the clinical relevance of 90-days DAOH in our study was limited considering the rarity of DAOH <81, also in high-risk patients. Furthermore, DAOH does not provide information on postoperative morbidity, prohibiting analysis on what went wrong.

References:

¹Ariti et al. AM Heart J 2011; 162:900-6 ²Myles et al. BMJ-OPEN;2017-015828 ³Jorgensen et al. BMJ-OPEN; 2015-009813