

Is Discharge within a Day following Total Hip Arthroplasty Safe in the Septuagenarian and Octogenarian Population? A Propensity-Matched Cohort Study

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INTRODUCTION:

Total hip arthroplasty (THA) is the preferred treatment for moderate to severe hip osteoarthritis. The use of THA is expected to increase significantly in the United States, particularly among older adults. While advancements in medical techniques have made THA feasible for older patients, it remains an expensive procedure. Hospital length of stay (LOS) is a major contributor to medical costs, and minimizing LOS can lead to substantial savings. Rapid discharge (RD) joint arthroplasty has shown comparable outcomes and cost savings, but its safety in older patients, particularly septuagenarians and octogenarians, is not well studied. This study aimed to investigate the outcomes of RD-THA in patients aged ≥70 compared to a longer length of stay. Specifically, we evaluated 1) patient factors associated with undergoing RD-THA, and 2) 30-day post-discharge complications between the two groups.

METHODS:

The study utilizes the National Surgical Quality Improvement Program (NSQIP) database from 2006 to 2020. The database contains perioperative variables and information up to 30 days post-surgery. Patients undergoing primary THA were included, and those who were not aged ≥70 or had emergency surgery were excluded. Propensity matching was performed to create two groups: RD (length of stay ≤ 1 day) and non-RD (length of stay > 1 day). Patient characteristics, perioperative complications, and readmission rates were analyzed.

RESULTS:

A total of 95,641 patients were identified, including 2,527 RD and 93,114 non-RD. Following propensity matching, both groups contained 2,192 patients. There were no significant demographic differences between the groups (**Table 1**). RD patients were found to have a shorter operative time (p< 0.001), less bleeding complications (p<0.001), and were more likely to be discharged home (p<0.001). The two cohorts did not differ in the remaining complications or 30-day postoperative period readmission among all patients and when evaluating septuagenarians and octogenarians (**Table 2**).

DISCUSSION AND CONCLUSION:

The findings suggest that RD-THA can be safely performed in septuagenarians and octogenarians, leading to potential cost savings and improved patient outcomes. However, in order to ensure a patient is eligible for RD-THA, tighter criteria are needed for preoperative selection as patient selection and careful preoperative assessment play a crucial role in achieving successful outcomes.

Characteristics	Rapid Discharge (N = 2,192)	Non-RD Discharge (N = 2,192)	P value
Sex			<0.001
Female	1,272 (58.0%)	1,272 (58.0%)	
Male	920 (42.0%)	920 (42.0%)	
Race			<0.001
Asian	60 (2.7%)	60 (2.7%)	
Black	187 (8.5%)	187 (8.5%)	
Hispanic	146 (6.7%)	146 (6.7%)	
Native American	1 (0.0%)	1 (0.0%)	
Unknown	247 (11.3%)	247 (11.3%)	
White	1,761 (80.1%)	1,761 (80.1%)	
Age			<0.001
70-74	1,488 (68.0%)	1,488 (68.0%)	
75-79	2,192 (100.0%)	2,192 (100.0%)	
80-84	1,488 (68.0%)	1,488 (68.0%)	
85-89	1,488 (68.0%)	1,488 (68.0%)	
90-94	1,488 (68.0%)	1,488 (68.0%)	
95-99	1,488 (68.0%)	1,488 (68.0%)	
Operative Time			<0.001
Mean	176.26 (30.7)	176.26 (30.7)	
SD	30.7	30.7	
Total Length of Hospital Stay (days)			<0.001
Mean	28.14 (8.4)	28.14 (8.4)	
SD	8.4	8.4	
Modified Charlson Comorbidity Index			<0.001
1-4	1,719 (78.4%)	1,719 (78.4%)	
5-6	473 (21.6%)	473 (21.6%)	
ASA Physical Classification System			<0.001
1-2	1,719 (78.4%)	1,719 (78.4%)	
3-4	473 (21.6%)	473 (21.6%)	
Discharge Destination*			<0.001
Home	1,719 (78.4%)	1,719 (78.4%)	
Skilled Care	473 (21.6%)	473 (21.6%)	
Other	0 (0.0%)	0 (0.0%)	
30-Day Postoperative Complications			<0.001
Wound	1,719 (78.4%)	1,719 (78.4%)	
Deep Infection	473 (21.6%)	473 (21.6%)	
Other	0 (0.0%)	0 (0.0%)	
30-Day Readmission			<0.001
Yes	473 (21.6%)	473 (21.6%)	
No	1,719 (78.4%)	1,719 (78.4%)	

successful

Characteristics	Rapid Discharge (N = 2,192)	Non-RD Discharge (N = 2,192)	P value
Operative Site Infection			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Superficial Infection	473 (21.6%)	473 (21.6%)	
Deep Infection	0 (0.0%)	0 (0.0%)	
Deep Infection			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Deep Infection	473 (21.6%)	473 (21.6%)	
Other Site Infection			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Other Site Infection	473 (21.6%)	473 (21.6%)	
Wound Dehiscence			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Wound Dehiscence	473 (21.6%)	473 (21.6%)	
Wound Healing			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Wound Healing	473 (21.6%)	473 (21.6%)	
Urinary Tract Infection			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Urinary Tract Infection	473 (21.6%)	473 (21.6%)	
Pulmonary Embolism			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Pulmonary Embolism	473 (21.6%)	473 (21.6%)	
Acute Kidney Injury			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Acute Kidney Injury	473 (21.6%)	473 (21.6%)	
Stroke			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Stroke	473 (21.6%)	473 (21.6%)	
Myocardial Infarction			<0.001
No Complication	1,719 (78.4%)	1,719 (78.4%)	
Myocardial Infarction	473 (21.6%)	473 (21.6%)	
Number of Readmission Occurrences			<0.001
0	1,719 (78.4%)	1,719 (78.4%)	
1	473 (21.6%)	473 (21.6%)	
2	0 (0.0%)	0 (0.0%)	
3	0 (0.0%)	0 (0.0%)	
4	0 (0.0%)	0 (0.0%)	
5	0 (0.0%)	0 (0.0%)	
6	0 (0.0%)	0 (0.0%)	
7	0 (0.0%)	0 (0.0%)	
8	0 (0.0%)	0 (0.0%)	
9	0 (0.0%)	0 (0.0%)	
10	0 (0.0%)	0 (0.0%)	
11	0 (0.0%)	0 (0.0%)	
12	0 (0.0%)	0 (0.0%)	
13	0 (0.0%)	0 (0.0%)	
14	0 (0.0%)	0 (0.0%)	
15	0 (0.0%)	0 (0.0%)	
16	0 (0.0%)	0 (0.0%)	
17	0 (0.0%)	0 (0.0%)	
18	0 (0.0%)	0 (0.0%)	
19	0 (0.0%)	0 (0.0%)	
20	0 (0.0%)	0 (0.0%)	
21	0 (0.0%)	0 (0.0%)	
22	0 (0.0%)	0 (0.0%)	
23	0 (0.0%)	0 (0.0%)	
24	0 (0.0%)	0 (0.0%)	
25	0 (0.0%)	0 (0.0%)	
26	0 (0.0%)	0 (0.0%)	
27	0 (0.0%)	0 (0.0%)	
28	0 (0.0%)	0 (0.0%)	
29	0 (0.0%)	0 (0.0%)	
30	0 (0.0%)	0 (0.0%)	

RD, Rapid Discharge; THA, Total Hip Arthroplasty; LOS, Length of Stay; VTE, Venous Thromboembolism

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