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 \geq 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.

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 \geq 70 or had emergency surgery were excluded. Propensity matching was performed to create two groups: RD (length of stay \leq 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.

Characteristic	Later Discharge (N = 2,192)	Rapid Discharge (N = 2,192)	P value
Ses			>0.991
Female	1,272 / 2,192 (58%)	1,272 / 2,192 (58%)	
Male	920 / 2,192 (42%)	920 / 2,192 (42%)	
Race			>0.991
Asian	60 / 2,192 (2.7%)	60 / 2,192 (2.7%)	
Black	57 / 2,192 (2.6%)	57 / 2,192 (2.6%)	
Hopanic	34/2,192 (1.6%)	34 / 2,192 (1.6%)	
Native American	1/2,192 (<0.1%)	1/2,192 (<0.1%)	
Unknown	247/2,192 (11%)	247/2,192 (11%)	
White	1,793 / 2,192 (82%)	1,793 / 2,192 (82%)	
Age	74.81 (4.25)	74.81 (4.25)	>0.99
ocation			<0.001
Inputient	2,182 / 2,192 (100%)	1,686 / 2,192 (77%)	
Outpatient	10 / 2,192 (0.5%)	506 / 2,192 (23%)	
pentive Time	88.29 (35.29)	77.76 (26.64)	<0.0012
retal Length of Hospital Stay (days)	3.12 (1.62)	0.00 (0.00)	<0.0012
3541	28.18 (4.92)	28.12 (4.75)	0.67
Notified Charlson Comorbidity Index			>0.99
34	2,179 / 2,192 (99%)	2,179 / 2,192 (99%)	
51	13 / 2,192 (0.6%)	13 / 2,192 (0.6%)	
SA Physical Classification System			>0.99
I- Ne Distarb	37/2,192 (1.7%)	37/2,192 (1.7%)	
2- Mild Distarb	1,329 / 2,192 (61%)	1,329 / 2,192 (6156)	
3- Severe Distarb	821 / 2,192 (37%)	821 / 2,192 (37%)	
4-Life Threat	5 / 2,192 (0.2%)	5 / 2,192 (0.2%)	
Nscharge Destination*			<0.0012
Expired	0 / 1,556 (0%)	1/2,183 (<0.1%)	
Home	1,096 / 1,556 (70%)	2,089 / 2,183 (96%)	
Rehab	126 / 1,556 (8.1%)	20 / 2,183 (0.9%)	
Separate Acute Care	8 / 1,556 (0.5%)	8 / 2,183 (0.4%)	
Skilled Care, Not Home	318 / 1,556 (20%)	63 / 2,183 (2.9%)	
Unskilled Facility Not Home	3 / 1,556 (0.2%)	0 / 2,183 (0%)	
Yincipal Anesthesia Technique			>0.991
Epidural	4/2,192 (0.2%)	4 / 2,192 (0.2%)	
General	537 / 2,192 (24%)	537/2,192 (24%)	
MAC/IV Solution	157 / 2,192 (7.2%)	157 / 2,192 (7.2%)	
Regional	5/2,192 (0.2%)	5 / 2,192 (0.2%)	
Spinal	1,489 / 2,192 (68%)	1,489 / 2,192 (68%)	
Nabetes			>0.99
Insulin	30 / 2,192 (1.4%)	30 / 2,192 (1.4%)	
Non-insulm	123 / 2,192 (5.6%)	123 / 2,192 (5.6%)	
Non-diabetic	2,039 / 2,192 (93%)	2,029 / 2,192 (92%)	
indes	44 / 2,192 (2.0%)	44 / 2,192 (2.0%)	>0.99
iteroid Use	20 / 2,192 (0.9%)	20 / 2,192 (0.9%)	>0.99
Reeding Disorders	11/2,192 (0.5%)	11 / 2,192 (0.5%)	>0.99
Rypertension	1,265 / 2,192 (58%)	1,265 / 2,192 (58%)	>0.99
listery of COPD	29/2.192(1.3%)	29 / 2,192 (1.3%)	>0.99

Characteristic	Later Discharge (N = 2,192)	Rapid Discharge (N = 2,192)	P value
Superficial Surgical Site infection			0.1
No Complication	2.178 / 2.192 (99%)	2,185/2,192(100%)	
Superficial Incisional SSI	14/2,192(0.6%)	7/2.192 (0.3%)	
Deep Incisional SSI			0.7
Ne Complication	2.187/2.192 (1995)	2.189 / 2.192 (100%)	
Deep Incisional SSI	5/2,192 (8.2%)	3 / 2,192 (0.1%)	
Organ Space SSI			0.2
Ne Complication	2.19172.192(190%)	2.187 / 2.192 (100%)	
Organ/Space 551	1/2,192 (-0.1%)	5/2.192 (8.2%)	_
Wound Discussion			>0.99
No Correliation	2.19172.192710010	2.190/2.192(1075)	
Wound Disruption	1/2.192 (+0.1%)	2/2.192(48.1%)	_
Presmosia			0.1
No Correliation	2.18672.192(1995)	2.191/2.192(100%)	
Posumenia	6/2.192 (8.3%)	1/2.1927(#150)	
Unaligned Inteleation			0.6
No Correlization	2.191 / 2.192 (1905)	2.189/2.192(1075)	
Unplaneed Intubation	1/2.192 (10.1%)	3 / 2.192 (0.1%)	
Pulmonary Embedian			>0.99
Ne Complication	2.188/2.192(199%)	2.188/2.192(100%)	
Pulmonary Embelian	4/2.192(8.2%)	4 (2.192 (0.2%)	
Acute Reval Failure			-
No Complication	2 192 / 2 192 / 34050	3 192 / 3 192 / 160%)	
Linery Tract Infortians	6.00.601(00.0)		0.2
No Complication	2 164 / 2 192 (995)	3 175 / 3 182 (98%)	
Universe Tarant Information	78.17.187.01.200	10.12102.0000	
Party risc antoine	10110101000	177101202004	10.00
No Paradication	3 1997 23 1987 23 00000	3 190 / 3 192 / 1920	10.77
Ded-270	1 (2 102 (2 102)	1 17 107 60 100	
Montes IN	77 ALTA (K.179)	27.201621-001700	
No Constitution	1 198 (1 191 (1900)	7 286 / 7 387 / 1899 /	9.7
No Complication	2,000/2,002 (000%)	2,19672,192 (199%)	
Appendiate intervent	1/ 4,194 (B.475)	an up the bid rule	-0.007
Sumper of Directing Instances Occurrences	2307 2,192 (1995)	2872,192 (1.2%)	10.001
No deservation of the second	1.0.01.13.003.004()	3 100 13 133 0000	-0.061
Netterpresent	1,562.1.2,152.09750	4,1997.4,194.(597%)	_
Tratectasions LBTROP Prenop	230/2,792 (19%)	29 / 2,192 (1.2%)	
Deep fear Internations (DTT)	2 (2 102 (2 24/)	1 10 100 00 00 000	
DAT Mequility Thereby	77.4,194 (8,3%)	472,004 062190	_
No Complexation	2,18572,192 (190%)	2,18872,192(100%)	
hepes .			0.7
Ne Complexiston	2,18772,192 (1995)	2,18972,192(100%)	_
Sebera	572,192 (82%)	3.12,092 (0.050	
Septie Shock*			-
No Complexition	2,192 (2,192 (1905))	2,78272,782(100%)	
Unplanned Responsion*	2471,181 (2.0%)	3672(173-(1.7%)	0.5
Any Resements	2772,192 (2.6%)	62 / 2,192 (2.9%)	0.6
Any Infections	1972,192(0.9%)	99 / 2,192 (0.5%)	0.14
Any would compace on	1972,192 (0.9%)	11 7 2, 192 (0.3%)	0.50
Any theodog Compacation	23712,192 (11%)	3972(192(1.4%)	100.001
Venous Thromboembolises			0.65
No Complication	2,18172,192 (99%)	2,184 / 2,192 (100%)	-
VTE Occurred	11 / 2,192 (0.5%)	8/2,192 (0.4%)	
All Transfusions			<0.001
Intraopentive Postopentive	230 / 2,292 (19%)	26 / 2,192 (1.2%)	
No Tratafasion	1,961 / 2,192 (1995)	2,166 / 2,192 (99%)	
Preoperative	1/2,192 (08.1%)	0 / 2,192 (0%)	
Cardiac Complication	4/2,192 (8.2%)	7/2,192 (0.3%)	0.55
Pulmonary Complication	1/2,192 (40.1%)	3 / 2,192 (0.1%)	0.62
Morality within 33 Data Date On	10 / 2 102 (B1C)	2 (2 192 (ell 156)	0.48

BMI, Body mass index; THA, Total Hip Arthroplasty; RD, Rapid discharge; VTE, Venous thromboembolism "Missing data for 647 patients