The Effect Anesthetic Method on the Incidence of Postoperative Delirium in Patients with Total Hip Replacement Arthroplasty in South Korea.

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Background

- ❖ There are various reports on the effect of the anesthetic method on neurologic complication. Especially, there is controversy about the effect of general anesthesia and regional anesthesia on incidence of postoperative delirium after total hip replacement arthroplasty (THRA).
- ❖ A population-based study was conducted to estimate the effect of anesthetic method on the incidence of postoperative delirium in patients with THRA on South Korea.

Methods

- ❖ Korean National Health Insurance (NHI) claims database of 24,379 cases were retrospectively collected and analyzed to identify THRA, defined as patients having a claim record with the operation code ‘N0711’ from January 2008 to December 2017.
- ❖ Patients were divided into 2 groups: GA group (n = 9,921) and RA group (n = 14,458).
- ❖ The incidence of delirium was assessed in cases when delirium medications such as haloperidol, chlorpromazine, olanzapine and risperidone were used.

Results

Table 1. Demographic data of patients that underwent total hip replacement arthroplasty.

	group GA (n = 9,921)	group RA (n = 14,458)	p value
Sex			0.003*
Male	5,938 (59.85)	8,925 (61.73)	
Female	3,983 (40.14)	5,533 (38.27)	
Age (yrs)	52.20 ± 11.51	53.59 ± 10.83	< 0.0001*
<65	8,400 (84.67)	11,909 (82.37)	
65-75	1,513 (15.25)	2,486 (17.19)	
75-85	8 (0.08)	57 (0.39)	
85≤	0	5 (0.03)	
Underlying disease			
HTN	1,733 (17.47)	2,257 (15.61)	0.928
DM	1,030 (10.38)	1,538 (10.64)	0.523
Cardiac disease	418 (4.21)	506 (3.50)	0.004*
Respiratory disease	225 (2.27)	327 (2.26)	0.975
Cerebrovascular disease	160 (1.61)	198 (1.37)	0.121

Table 2. Perioperative data from patients that underwent THRA

	group GA (n = 9,921)	group RA (n = 14,458)	P value
Diagnosis			< 0.001*
Necrosis	4,634 (46.71)	7,787 (53.86)	
Unspecified hip arthropathy	1,741 (17.55)	2,618 (18.11)	
Femur fracture	900 (9.07)	1,439 (9.95)	
Other arthropathy	274 (2.76)	303 (2.10)	
Other arthritis	219 (2.21)	418 (2.89)	
etc.	2,153 (21.70)	1,893 (13.09)	
Hospital stay (days)	17.88 ± 11.96	18.10 ± 11.10	< 0.001*
Cost (won)	651.93 (564.35–730.34)	617.25 (545.26–709.31)	< 0.001*
Patient charges (won)	128.65 (68.40–149.86)	123.61 (75.71–144.95)	< 0.001*
Insurance (won)	526.87 (452.42–600.83)	494.69 (43603–580.40)	< 0.001*
Delirium	142 (1.43)	209 (0.86)	0.927
Mortality rate	20 (0.20)	36 (0.25)	0.448

Table 3. Logistic regression analysis of patients that underwent THRA

	Univariate				Multivariate			
		95% CI				95% CI		
	Odds ratio	low	high	p value	Odds ratio	low	high	p value
Sex	1.268	1.015	1.585	0.037*	1.267	1.013	1.583	0.038†
Anesthetic method	0.990	0.799	1.227	0.927				
Age	1.000	0.991	1.009	0.989				
HTN	0.935	0.704	1.242	0.642				
DM	0.969	0.690	1.360	0.856				
Cardiac disease	0.881	0.523	1.484	0.633				
Respiratory disease	2.024	0.753	5.444	0.162				
CVD	1.031	0.424	2.509	0.946				
Diagnosis for surgery	0.996	0.906	1.096	0.940				
Hospital stay	0.992	0.984	0.999	0.036*	0.992	0.984	1.000	0.038†
Cost	1.000	1.000	1.000	0.204				
Mortality	0.803	0.111	5.815	0.828				

Conclusion

- ❖ Our results revealed that anesthetic methods were not associated with the incidence of postoperative delirium. In addition, male patients undergoing THRA should be managed with caution for postoperative delirium.