

Comparison Between Patient Control Analgesia Combine With Periarticular Drug Injection And Patient Control Analgesia Alone In Total Knee Arthroplasty

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INTRODUCTION:

Total knee replacement is the most successful arthroplasty operation with good outcome and fewer complication rates. Despite its successful operation, pain post operation period is still the major factor influencing the outcome of operation. We study the efficacy of periarticular drug cocktail injection in managing postoperative pain in total knee arthroplasty in terms of pain and morphine consumptions.

MATERIALS & METHODS:

Patients who were diagnosed as primary osteoarthritis of the knee who underwent total knee replacement were enrolled in this study. Intervention group received cocktail injection of bupivacaine, adrenaline, morphine sulphate and diclofenac sodium at periarticular region during the operation. Both groups were started on PCA morphine post-operatively. Pain score at 6, 12 and 24 hour postoperative period recorded and total morphine consumption were recorded.

RESULTS:

There were 54 subjects recruited. The mean visual analog score in intervention group at 6 hour post operative period was statistically significant compared to control group. The mean visual analog score at 12 hours period was lower in intervention group but was not significant. Total morphine consumption at the first 24 hour period post operation was lower in the intervention group and is statistically significant.

		Group				Total		χ^2	P
		Control		Intervention					
		N	%	N	%	N	%		
Gender	Female	19	70.4	15	55.6	34	63.0	1.27	0.260
	Male	8	29.6	12	44.4	20	37.0		
Race	Malay	9	33.3	13	48.1	22	40.7	1.26	0.532
	Chinese	15	55.6	12	44.4	27	50.0		
	Indian	3	11.1	2	7.4	5	9.3		

Figure 1: Demographic distribution

	Group				t	P
	Control		Intervention			
	Mean	Std. Deviation	Mean	Std. Deviation		
age	63.15	3.34	64.04	3.81	-0.91	0.366
knee op	1.59	0.50	1.56	0.51	0.27	0.788
vas6	4.11	0.89	3.00	0.68	5.15	0.001*
vas12	2.63	0.49	2.52	0.51	0.82	0.419
vas24	2.15	0.66	2.19	0.62	-0.21	0.833
morphine6	16.56	5.06	10.52	4.54	4.61	0.001*
morphine12	27.00	4.76	21.67	6.10	3.58	0.001*
morphine24	39.26	5.95	34.81	6.64	2.59	0.012*

Figure 2: Statistical analysis

DISCUSSIONS:

The finding was consistent with the effects of local anesthesia that can last up to 7 hours after local injection. With better pain control, patient is able to start rehabilitation as early as possible without traumatic experience of pain¹. Lower postoperative opioids consumption prevented patient from having adverse effects of the medication especially in the elderly where nausea and vomiting were the most common side effect².

CONCLUSION:

Periarticular injection of bupivacaine, adrenaline, morphine sulphate and diclofenac sodium at periarticular region during total knee arthroplasty is effective to reduce post-operative pain and to reduce total morphine consumption in early post-operative period.

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