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Background and aims

Dexamethasone provides anti-inflammatory and analgesic effect, but induces hyperglycemia and may increase serum lactate. The aim was to determine the effect of dexamethasone on analgesia, blood glucose and lactate level after hip arthroplasty.

Methods

- 1) Prospective randomized pilot study includes 50 patients undergoing hip arthroplasty.
- 2) SA and multimodal analgesia, Sol. Morphini 10 mg s/c as a rescue medication.
- 3) The experimental group received i/v dexamethasone 8 mg peroperatively and 4 mg i/v at 6 and 12 hours after the first dose.
- 4) The control group didn't receive glucocorticoids
- 5) Blood glucose and lactate levels were measured before the surgery and after at 18.00 and 6.00 on the 1st post operative day (POD1).
- 6) Patients filled in a pain questionnaire (VAS scale) for the perioperative period.
- 7) The amount of rescue analgesic were counted for a period 24 h after surgery
- 8) Data were processed using SPSS program.

Results

- Pain level in rest in the experimental and control group accordingly was - 1.2 and 3.1 (p<0.001) at 18:00; 0.8 and 2.3 (p<0.001) at 6:00 on POD1; 1 and 2.2 (p<0.015) at 18:00 on POD1.(fig.1)
- Pain level on movement in the experimental and control group accordingly was - 2.0 and 3.9 (p<0.001) at 18:00; 1.8 and 4.2 (p<0.001) at 6:00; 2.2 and 3.8 (p<0,001) at 18:00 on POD1. (fig.2)
- There is no significant differences in requirement of rescue analgesic between these groups.

Table 1: Glucose level variation during perioperative period (mmol/l)

	Start	18:00	6:00
Control group	5.4	6.4	5.8
Dexone group	5.5	8.3	7.5
CI of the difference	0.19 0.52	1.08; 2.66	1.16; 2.35
P-value	-	<0.001	<0.001

Table 2 : Lactate level variation during perioperative period (mmol/l)

	Start	18:00	6:00
Control group	1.57	1.08	1.54
Dexone group	1.02	1.32	1.9
CI of the difference	-1.03 -0.07	-0,3; 0.77	-0.2; 0.91
P-value	-	0.38	0.2

Perioperative pain level

■ Pain_move_start
■ Pain_move_18.00
■ Pain_move_6.00_POD1
■ Pain_move_18.00_POD1

d - dexamethasone group
 k - control group

Figure 1: pain in rest

Figure 2: pain on movement

Conclusions

- 1) dexamethasone provides excellent analgesic effect
- 2) serum glucose and lactate do not reach recovery affecting level during perioperative period after hip replacement.
- 3) dexamethasone doesn't allow the use of lower rescue medication dose.

References

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