Intrathecal Morphine for caesarean delivery

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Background: Caesarean delivery is often associated with strong postoperative pain and still leads in up to 18% to chronic postoperative pain. Intrathecal opioids are commonly used for analgesia and the reduction of needed local anaesthetics. We examined, whether the addition of morphine to the standard sufentanil has an impact on postoperative analgesia after caesarean delivery.

Methods: Using a before-and-after design we changed our standard protocol for spinal anaesthesia which includes 10 mg bupivacaine hyperbaric and 5 µg sufentanil by adding 100 µg morphine. 153 patients undergoing caesarean delivery were examined. (83 with additional morphine, 70 without)

The extent of pain during the first 24 hours after surgery was the primary outcome measure. Additionally, side effects (nausea, dizziness, obstipation, pruritus, back pain, headaches) and the use of analgesics were compared. Data collection was accomplished via pain-out-questionnaire. For statistical analysis, the Mann-Whitney-U-Test was used.

Results: Evidence from this systematic investigation suggests no beneficial effect of additional morphine concerning maximum pain intensity, (VAS 0-10: 7,0 vs 7,0, median) but increased side effects like nausea, dizziness and pruritus.

Women who received morphine and sufentanil reported significant less restrictions in activity in bed (7,0 vs 7,5) and in sleeping (3,0 vs 5,0) [0= no restrictions, 10= maximum restrictions]. They were more satisfied with the pain management (8,0 vs 7,0) [0= very unhappy, 10= very pleased] and were given significant less paracetamol and tramadol than patients who only obtained sufentanil intrathecal.

Conclusion: Additional morphine has no benefit relating to maximum pain intensity whereas side effects are deteriorated. But women with additional morphine are more satisfied with pain therapy. These women seem to accept the side effects for less restrictions.

	with morphine ¹	Without morphine ¹	u-value	z-value	p-value ²
maximum pain	7 5,75-7,25	7 6,00-8,00	2296,50	-2,16	p=.031 p=.124
minimum pain	2 1,00-3,00	3 1,00-3,00	2255,00	-1,80	p=.072 p=.144
restrictions in activity in bed	7 5,00-8,00	7,50 6,75-9,00	2132,50	-2,76	p=.006 p=.030
restrictions in taking a deep breath or coughing	6 3,00-8,00	7 5,00-8,00	2302,00	-2,12	p=.034 p=.124
restrictions in sleeping	3 1,00-6,00	5 3,00-7,00	1789,00	-3,91	p<.001 p<.001
satisfaction with pain management	8,00 7,00-10,00	7,00 4,00-8,00	1960,50	3,50	p<.001 p<.001
table1: differences in pain related questions between patients with or without additional morphine					
¹ median and interquartile range					
² before and after alpha-error-adjustment					

	with morphine ¹	Without morphine ¹	u-value	z-value	p-value ²
nausea	1 0,00-7,00	0 0,00-1,50	2089,00	-3,16	p=.002 p=.012
dizziness	3 0,00-6,00	1 0,00-3,00	2078,00	-2,89	p=.004 p=.020
obstipation	0 0,00-3,00	0 0,00-4,00	329,50	-0,36	p=.717 p=1.00
pruritus	3 0,00-7,00	2 0,00-4,00	2173,00	-2,63	p=.009 p=.036
back pain	1,50 0,00-4,25	1 0,00-4,00	451,50	-0,20	p=.839 p=1.00
headaches	0 0,00-0,00	0 0,00-1,00	2078,00	-2,89	p=.327 p=.981
table 2: differences in adverse side effects between patients with or without additional morphine					
¹ median and interquartile range					
² before and after alpha-error-adjustment					

	with morphine ¹	Without morphine ¹	u-value	z-value	p-value ²
paracetamol (mg)	0 (32) 0,00-1000,00	1000 (43) 0,00-1000,00	2185	-2,91	p=.004 p=.020
piritramid (mg)	0 (38) 0,00-5,00	2 (36) 0,00-5,00	2834,50	-0,28	p=.781 p=1.00
ibuprofen (mg)	800 (53) 0,00-1600,00	800 (55) 600,00-1600,00	2524	-1,43	p=.152 p=.456
diclofenac (mg)	100 (43) 0,00-100,00	100 (46) 0,00-125,00	2368	-2,11	p=.035 p=.140
tramadol (mg)	0 (6) 0,00-0,00	0 (17) 0,00-9,38	2383,5	-3,07	p=.002 p=.012
table 3: differences in consumption of pain medicine between patients with or without additional morphine					
¹ median and interquartile range (number of patients who took this medication)					
² before and after alpha-error-adjustment					

Inclusion criteria: elective caesarean section (≥ 37th week of pregnancy), age > 18 years, ASA I-III, and informed consent for regional anaesthesia