

# Experience of Back Pain Symptoms and the Choice of Epidural Analgesia in Labour: a Patient Questionnaire Survey

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## **Objective:**

To evaluate whether the experience of back pain affects patients' preference for epidural analgesia in labour.

## **Methods:**

Two parallel cross-sectional surveys were performed in a cohort of antenatal patients and a cohort of postnatal patients over one month in an unselected general obstetric population. Two specific but parallel self-administered questionnaires were used separately for antenatal and postnatal patients. Questions were targeted on patients' experience of back pain before or during pregnancy, and the impact of this pain experience on their attitudes towards using epidural analgesia in labour.

## **Results:**

A total of 261 antenatal and 365 postnatal patients were recruited. The incidence of back pain in antenatal patients was 8.4% and that in postnatal patients was 53.9%. Antenatal patients with back pain were less likely to request epidural analgesia when in labour ( $p < 0.025$ ), and were more concerned with postpartum back pain ( $p < 0.05$ ) as a possible complication. Postnatal patients with back pain were less likely to regard epidural analgesia as the most effective method of pain control in labour ( $p < 0.05$ ), and were less likely to request an epidural analgesia ( $p < 0.05$ ). They were more concerned with immobility and postpartum back pain rather than side-effects of epidural analgesia to the foetus ( $p < 0.025$ ) as compared to those with no pain.

## **Conclusion:**

The experience of back pain in the index pregnancy has a significant negative impact on patients' attitudes and utilisation of epidural analgesia in labour.

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*Keywords: Analgesia, epidural; Low back pain; Pregnancy*

## **Introduction**

Pain relief in labour is an important aspect of obstetric management. The use of epidural analgesia has been widely accepted as the most effective means of pain control during labour, and its benefits are well recognised<sup>1</sup>. The proportion of women utilising epidural analgesia when in labour is variable in different areas of the world. In Hong Kong it is only around 9.5 to 15%<sup>2-4</sup>. This figure is significantly lower than that in other developed countries, which quoted a rate of 20 to 50%<sup>5,6</sup>. Many factors are responsible for this low utilisation for epidural analgesia, including inadequate patient knowledge and

anaesthetic resources, and concerns about complications from the epidural analgesia. In a recent local survey, around 40% of patients name postpartum back pain as a possible major complication of the procedure<sup>4</sup>. Although many studies looking into the association between the use of epidural analgesia and subsequent postpartum back pain<sup>7-9</sup> have concluded that a causal relationship

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is lacking, this remains a major concern among many pregnant women. Experience of back pain, either during pregnancy or not, could negatively affect the women's decision to take up epidural analgesia in labour. Thus, the present survey aimed at delineating whether back pain during pregnancy adversely affects the use of epidural analgesia in labour.

## Methods

The study was designed as a cross-sectional survey of both antenatal patients and postnatal patients. New antenatal booking patients at the United Christian Hospital were recruited for one calendar month (January 2005) for the antenatal survey, and all patients delivered within the same calendar month in the units were also recruited simultaneously for the postnatal survey. Antenatal patients consisted of booked patients at the hospital antenatal clinic at their first medical consultation, or when they were first referred from the Maternal and Child Health Clinics of Kowloon East Cluster. Postnatal recruitment included all patients irrespective of whether they were booked, or were admitted as unbooked emergency cases. The postnatal questionnaire was administered to all these patients in the early postpartum period within their stay in hospital after delivery. The surveys were done concurrently with the patients' attitude to epidural analgesia survey conducted by the Obstetrics and Gynaecology Quality Assurance Subcommittee of the Hospital Authority<sup>4</sup>.

Two separate survey questionnaires were administered to antenatal and postnatal patients respectively. The antenatal questionnaire focused on evaluating patients' attitudes of epidural analgesia as an option for pain control during labour, and their awareness of the provision of such services in their local settings. The postpartum questionnaire, apart from gathering the same information on patients' awareness and attitudes, also contained targeted questions to patients' actual means of pain control in their delivery and their satisfaction with or without epidural analgesia. Additional questions evaluating experience of significant back pain in the current pregnancy, in previous pregnancies, or when non-pregnant were included. The pattern and severity of pain, and associated morbidity were asked in both sets of questionnaires. In particular, those reporting back pain were asked to grade their worse symptoms against a visual analogue scale, with 10 representing full-blown

labour pain without any analgesia. Their symptoms were considered to be significant if they graded their worse symptoms as 5 or above.

The questionnaires were designed to be completed by the patients themselves. All bore the patient's basic epidemiological data for later correlation with patients' pregnancy details. It was stressed by staff during the distribution of the questionnaire that the participation was entirely voluntary, and that patients were free to opt out, particularly if they were illiterate, could not understand the language used, or if they simply did not want to participate, with no consequences to their clinical management.

Initial sorting excluded questionnaires that were blank, unintelligibly filled in, or when key essential items concerning back pain were not answered. A comparison of the attitude and opinions towards the use of epidural analgesia in those with or without a history of back pain was made separately in antenatal and postnatal patients, using appropriate contingency tables and Chi squared tests. Analysis was performed using the Statistical Package for Social Sciences for Windows 13.0 (Chicago, IL, US) and  $p < 0.05$  was considered significant.

## Results

A total of 261 antenatal patients and 365 postnatal patients with satisfactorily completed questionnaires were analysed. This represented 84% of eligible antenatal patients and 92% of eligible postnatal patients during the study period. The antenatal and postnatal patients were comparable with respect to their age, education levels, parity, and occupation (Table 1). Slightly more postnatal patients reported previous back pain symptoms when not pregnant (15.9% vs 14.6%), while more antenatal patients reported previous pregnancy-related back pain symptoms (53.4% vs 51.0%). These differences were not statistically significant. Multiparous patients in the two groups reported similar incidence of early postpartum back pain (35.4% vs 37.6%). Only 8.4% of antenatal patients reported significant back pain symptoms in the current pregnancy, as compared to 54.0% for the postnatal patients, presumably because the majority of antenatal patients were still in early gestation. Over two-thirds of these symptomatic women had low back pain, while most of the rest had sciatica type of pain (Table 1).

**Table 1. Epidemiological data and back pain history for antenatal and postnatal patients**

<b>Epidemiological data</b>	<b>Antenatal patients (n=261)</b>	<b>Postnatal patients (n=365)</b>
Mean (SD) age (years)	31.7 (3.5)	32.3 (4.0)
Education		
Primary	27 (10.3%)	12 (3.3%)
Secondary	178 (68.2%)	324 (88.8%)
Tertiary	56 (21.5%)	29 (7.9%)
Parity before current pregnancy/delivery		
Primiparous	128 (49.0%)	173 (47.4%)
Multiparous	133 (51.0%)	192 (52.6%)
Occupation		
Professional/clerical	54 (20.7%)	70 (19.2%)
Technical	66 (25.3%)	32 (8.8%)
Service	108 (41.4%)	63 (17.3%)
Manual	35 (13.4%)	52 (14.2%)
Housewife	130 (45%)	156 (42.7%)
History of previous non-pregnant back pain	38 (14.6%)	58 (15.9%)
History of previous pregnancy-related back pain (multiparous)	71/133 (53.4%)	98/192 (51.0%)
Mean (SD) gestation in previous pregnancy with worse symptoms (weeks)	33.3 (5.3)	36.0 (4.5)
Previous early postpartum back pain	50/133 (37.6%)	68/192 (35.4%)
Back pain in index pregnancy	22 (8.4%)	197 (54.0%)
Pain pattern in index pregnancy		
Lower back	16/22 (72.7%)	134/197 (68.0%)
Sciatica	4/22 (18.2%)	36/197 (18.3%)
Lower back + sciatica	2/22 (9.1%)	18/197 (9.1%)
Thoracic	0	7 (3.6%)
Others	0	2 (1.0%)

**Antenatal Survey**

Of the cohort of 261 antenatal patients, 22 (8.4%) complained of significant back pain during this index pregnancy. The mean gestation of all antenatal patients when completing the survey was 22.4 (SD, 5.6) weeks and the mean gestation for the onset of significant pain symptoms in the index pregnancy for those reporting back pain was 29.4 (SD, 6.2) weeks. A significantly higher proportion of those with pain in this pregnancy also had pain before this pregnancy as compared to those with no pain symptoms (68.2% vs 23.4%,  $p < 0.001$ ) [Table 2, Q0]. Of those already with back pain, 59.1% had decided not to choose epidural analgesia when in labour, compared to only 30.1% of those without pain ( $p < 0.025$ ) [Q4a]. A higher proportion of those with back pain believed that postpartum back pain is a possible complication of epidural analgesia (54.5%) compared to the no-pain group (27.6%) ( $p < 0.05$ ) [Q11]. There were otherwise no significant differences in their choice of

the most effective means of labour pain control [Q2], their reasons for not choosing epidural analgesia [Q5], or their concept of the proper use of epidural analgesia in labour [Q12 and Q13].

**Postnatal Survey**

A total of 365 patients with completed questionnaires were included in the analysis, of which 197 (53.9%) complained of significant back pain symptoms in this current pregnancy. A significantly higher proportion (60.9%) of these women with pain in the current pregnancy had a history of back pain before the pregnancy ( $p < 0.001$ ) [Table 3, Q0], but only 15.2% of these considered epidural analgesia as the most effective means of pain relief in labour compared to those with no back pain (28.6%) ( $p < 0.05$ ) [Q3]. In addition, much fewer of these women actually requested epidural analgesia (9.1% vs 17.9%;  $p < 0.05$ ) when in labour [Q4b]. The proportion of those believing postpartum back pain is a

**Table 2. Comparison of opinion differences in antenatal patients with or without back pain**

Question	With back pain (n=22)	Without back pain (n=239)	p Value
0 Do you have any history of back pain before this pregnancy? <input type="checkbox"/> No <input type="checkbox"/> Yes	7 (31.8%) 15 (68.2%)	183 (76.6%) 56 (23.4%)	<0.001
2 What do you think is the most effective means of pain control in labour? a) No effective method b) Pain-killing muscular injections c) Patient-controlled intravenous injections d) Pain-killing gas inhalation a) Epidural analgesia b) Others c) Don't know	4 (18.2%) 4 (18.2%) 1 (4.5%) 5 (22.7%) 1 (4.5%) 0 7 (31.8%)	50 (20.9%) 26 (10.9%) 3 (1.3%) 34 (14.2%) 45 (18.8%) 2 (0.8%) 79 (33.1%)	NS
4a Will you request an epidural when in labour? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not decided	3 (13.6%) 13 (59.1%) 6 (27.3%)	34 (14.2%) 72 (30.1%) 133 (55.6%)	<0.025
5* If you are not going to request epidural during your labour, the reasons will be a) I did not need pain control b) I wanted the labour to go natural c) I did not think it was available/I am not eligible d) I delivered too quickly e) Worried about complications of epidural f) Worried about increased obstetric interventions g) Others	(n=13) 1 (7.7%) 1 (7.7%) 3 (23.1%) 0 6 (46.2%) 2 (15.4%) 0	(n=72) 4 (5.6%) 24 (33.3%) 2 (2.8%) 0 30 (41.7%) 9 (12.5%) 3 (4.2%)	NS
11 Which do you think are possible complications of epidural analgesia <input type="checkbox"/> Breathing difficulties <input type="checkbox"/> The needle may injure important organs in my back <input type="checkbox"/> The drugs used can have harmful effects on the foetus <input type="checkbox"/> I will not be mobile even over 1 day after the delivery <input type="checkbox"/> Postpartum back pain	2 (9.1%) 2 (9.1%) 2 (9.1%) 4 (18.2%) 12 (54.5%)	15 (6.3%) 56 (23.4%) 58 (24.3%) 44 (18.4%) 66 (27.6%)	<0.05
12 How common do you think is epidural analgesia used in women during their labour process? a) Rarely b) Occasionally, for specific indications c) Often d) For most women e) Not sure	2 (9.1%) 3 (13.6%) 4 (18.2%) 6 (27.3%) 7 (31.8%)	23 (9.6%) 29 (12.1%) 38 (15.9%) 65 (27.2%) 84 (35.1%)	NS
13 Do you think epidural analgesia should be available to all suitable obstetric patients going through labour? a) Yes b) No c) Don't know	8 (36.4%) 5 (22.7%) 9 (40.9%)	94 (39.3%) 57 (23.8%) 88 (36.8%)	NS

\* Multiple answers allowed in Question 5

significant complication of epidural analgesia was similar (35.0% vs 32.1%) between the two groups, but those with back pain were more concerned with immobility

after the epidural analgesia rather than drug effects on the foetus (p<0.025) [Q11]. There were otherwise no significant differences in their reasons for not choosing

**Table 3. Comparison of opinion differences in postnatal patients with or without back pain**

Question	With back pain (n=197)	Without back pain (n=168)	p Value
0 Do you have any history of back pain before this pregnancy? <input type="checkbox"/> No <input type="checkbox"/> Yes	77 (39.1%) 120 (60.9%)	126 (75.0%) 42 (25.0%)	<0.001
3 What do you think is the most effective means of pain control in labour? e) No effective method f) Pain killing muscular injections g) Patient controlled intravenous injections h) Pain killing gas inhalation d) Epidural analgesia e) Others f) Don't know	42 (21.3%) 28 (14.2%) 7 (3.6%) 56 (28.4%) 30 (15.2%) 8 (4.1%) 26 (13.2%)	35 (20.8%) 18 (10.7%) 7 (4.2%) 40 (23.8%) 48 (28.6%) 4 (2.4%) 16 (9.5%)	<0.05
4b Did you request an epidural when you were in labour in this current pregnancy? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> I had a caesarean section without going through labour	18 (9.1%) 158 (80.2%) 21 (10.7%)	30 (17.9%) 125 (74.4%) 13 (7.7%)	<0.05
5* If you did not request epidural during your labour, the reasons will be a) I did not need pain control b) I wanted the labour to go natural c) I did not think it was available/ I am not eligible d) I delivered too quickly e) Worried about complications of epidural f) Worried about increased obstetric interventions g) Others	(n=158) 16 (10.1%) 138 (87.3%) 6 (3.8%) 0 54 (34.2%) 25 (15.8%) 10 (6.3%)	(n=125) 10 (8.0%) 120 (96.0%) 10 (8.0%) 4 (3.2%) 38 (30.4%) 34 (27.2%) 5 (4.0%)	NS
6b If you did request for epidural analgesia when in labour, did you actually undergo the procedure? <input type="checkbox"/> Yes <input type="checkbox"/> No	(n=18) 10 (55.6%) 8 (44.4%)	(n=30) 17 (56.7%) 13 (43.3%)	NS
11 Which do you think are possible complications of epidural analgesia <input type="checkbox"/> Breathing difficulties <input type="checkbox"/> The needle may injure important organs in my back <input type="checkbox"/> The drugs used can have harmful effects on the fetus <input type="checkbox"/> I will not be mobile even over 1 day after the delivery <input type="checkbox"/> Postpartum back pain	9 (4.6%) 56 (28.4%) 28 (14.2%) 35 (17.8%) 69 (35.0%)	10 (6.0%) 42 (25.0%) 40 (23.8%) 22 (13.1%) 54 (32.1%)	<0.025
12 How common do you think is epidural analgesia used in women during their labour process? a) Rarely b) Occasionally, for specific indications c) Often d) For most women e) Not sure	21 (10.7%) 27 (13.7%) 40 (20.3%) 46 (23.4%) 63 (32.0%)	16 (9.5%) 26 (15.5%) 34 (20.2%) 40 (23.8%) 52 (31.0%)	NS
13 Do you think epidural analgesia should be available to all suitable obstetric patients going through labour? a) Yes b) No c) Don't know	72 (36.5%) 51 (25.9%) 74 (37.6%)	60 (35.7%) 42 (25.0%) 66 (39.3%)	NS

\* Multiple answers allowed in Question 5

epidural analgesia [Q5] or their concept of the proper use of epidural analgesia in labour [Q12 and Q13].

## Discussion

The current survey showed that patients with symptoms of back pain in their current pregnancy were less likely to choose epidural analgesia as the choice of pain control when in labour. In antenatal patients, while the incidence of back pain symptoms was low because of the early gestation at which the survey was conducted, it could still be shown that those with back pain were less likely to request epidural analgesia when in labour, and that these women were more concerned with postpartum back pain ( $p < 0.05$ ) as a possible complication of epidural analgesia. Postnatal patients with back pain were less likely to regard epidural analgesia as the most effective method of pain control in labour, were less likely to request an epidural analgesia, and were more concerned with immobility and postpartum back pain after epidural analgesia rather than side-effects of epidural analgesia to the foetus.

While the efficacy of epidural analgesia in intrapartum pain management has been well established in the literature<sup>11</sup>, data associating the choice and patterns of intrapartum pain management and women's satisfaction with obstetric pain management remain limited<sup>12</sup>. In addition, local data on the overall patterns of obstetric pain management were lacking and limited to surveys concerning service provision rather than genuine patient demand<sup>2,3</sup>. Data from a recent local survey in Hong Kong public hospitals showed that the epidural analgesia rate was only 9.5%<sup>4</sup>, which was significantly lower than figures reported in the western literature. Such significant differences in epidural analgesia rates have been due to the lack of resources and manpower rather than expertise<sup>2,3</sup>, but a lack of patient education and awareness and low patient demand could also be contributing factors. A recent local survey in public hospitals showed poor patient awareness of the proper role of epidural analgesia in intrapartum pain management, with a large proportion of patients being uncertain whether epidural analgesia should be routinely used in labour, and unsure of the most effective means of pain control in labour<sup>4</sup>. The poor general knowledge concerning epidural analgesia was further compounded by limited provision of anaesthetic services for labour analgesia, so that only half of those who requested

epidural analgesia actually received the service.

Given the low rate of request for epidural analgesia, it was interesting to explore other possible related factors that would deter patients from asking for this service when in labour. Previous survey data have shown that postpartum back pain was the complication of highest concern in both antenatal and postpartum patients<sup>4</sup>. Local data have shown a very high incidence of back pain of up to 76.6% during pregnancy<sup>13</sup>, with a high proportion of the symptomatic women having previous experience of back pain<sup>14</sup>. This pattern was also obvious from the data obtained in the current survey. As the worst pain symptoms usually appear only in mid-trimester<sup>13,15</sup>, it was logical that the incidence of back pain was much lower in the antenatal cohort as compared to the postnatal cohort in this study.

The incidence of early postpartum back pain after an epidural analgesia from previous local data was 13%<sup>2</sup>. Postpartum back pain after epidural analgesia was attributed to the stressed postures during labour which could be exacerbated by epidural analgesia<sup>7</sup>. Recent data, including randomised control trials, have failed to support such an association between epidural analgesia and long-term back pain<sup>8-10</sup>. Observational data in local patients also failed to show such association<sup>13</sup>, nor were there any evidence that epidural analgesia during labour would increase the incidence of persistent pain symptoms in the months or years after the pregnancy<sup>13,16,17</sup>. A common misconception among our pregnant women would be that epidural analgesia not only induces postpartum back pain, but also exacerbates or prolongs back pain symptoms that have already appeared during pregnancy. Thus, specific emphasis on the lack of evidence to associate any long-term back pain with epidural analgesia should be made when disseminating knowledge about epidural analgesia to patients. This should serve to alleviate unnecessary fears in patients and to further increase the proportion of patients who prefer epidural analgesia as the option of labour pain management.

In summary, the results of this survey showed that the presence of back pain symptoms during pregnancy was associated with significantly fewer requests or preferences for epidural analgesia in labour. Previous local data have shown a very poor uptake of intrapartum

epidural services, due to insufficient knowledge and limited availability of such services. Given the very high incidence of back pain symptoms in labour, such a negative effect on their choice would further reduce the

uptake rate for intrapartum epidural analgesia. Specific efforts to dispel this unfounded belief in pregnant women should help to improve the acceptability of epidural analgesia in labour.

## References

1. Reynolds F. Pain relief in labour. *Br J Obstet Gynaecol* 1990; 97:757-9.
2. Chen PP, Lee BB, Ma M, Hung VY, Ngan Kee WD. Obstetric epidural analgesia in Hong Kong. *Hong Kong Med J* 1996; 2:390-5.
3. Lee BB, Chen PP, Ngan Kee WD. Status of obstetric epidural analgesia services in Hong Kong public hospitals: postal questionnaire survey. *Hong Kong Med J* 2003; 9:407-14.
4. To WW; Quality Assurance Subcommittee in Obstetrics and Gynaecology, Hospital Authority, Hong Kong. A questionnaire survey on patients' attitudes towards epidural analgesia in labour. *Hong Kong Med J* 2007; 13:208-15.
5. Davis MW, Harrison JC, Ryan TD. Current practice of epidural analgesia during normal labour. A survey of maternity units in the United Kingdom. *Anaesthesia* 1993; 48:63-5.
6. Henry A, Nand SL. Intrapartum pain management at the Royal Hospital for Women. *Aust NZ J Obstet Gynaecol* 2004; 44:307-13.
7. Russell R, Groves P, Taub N, O'Dowd J, Reynolds F. Assessing long term back pain after childbirth. *BMJ* 1993; 306:1299-303.
8. Macarthur A, Macarthur C, Weeks S. Epidural anaesthesia and low back pain after delivery: a prospective cohort study. *BMJ* 1995; 311:1336-9.
9. Howell CJ, Kidd C, Roberts W, et al. A randomized controlled trial of epidural compared with non-epidural analgesia in labour. *BJOG* 2001; 108:27-33.
10. Henry A, Nand SL. Women's antenatal knowledge and plans regarding intrapartum pain management at the Royal Hospital for Women. *Aust NZ J Obstet Gynaecol* 2004; 44:314-7.
11. Howell CJ. Epidural versus non-epidural analgesia for pain relief in labour. *Cochrane Database Syst Rev* 2000;(2):CD000331.
12. Paech MJ, Gurrin LC. A survey of parturients using epidural analgesia during labour. Considerations relevant to antenatal educators. *Aust NZ J Obstet Gynaecol* 1999; 39:21-5.
13. To WW, Wong MW. Factors associated with back pain symptoms in pregnancy and persistence of pain 2 years after pregnancy. *Acta Obstet Gynecol Scand* 2003; 82:1086-91.
14. Ostgaard HC, Andersson GB. Previous back pain and risk of developing back pain in a future pregnancy. *Spine* 1991; 16:432-6.
15. Damen L, Buyruk HM, Güler-Uysal F, Lotgering FK, Snijders CJ, Stam HJ. Pelvic pain during pregnancy is associated with asymmetric laxity of the sacroiliac joints. *Acta Obstet Gynecol Scand* 2001; 80:1019-24.
16. Norén L, Ostgaard S, Johansson G, Ostgaard HC. Lumbar back and posterior pelvic pain during pregnancy: a 3-year follow-up. *Eur Spine J* 2002; 11:267-71.
17. Breen TW, Ransil BJ, Groves PA, Oriol NE. Factors associated with back pain after childbirth. *Anesthesiology* 1994; 81:29-34.