Accuracy of recall of back pain after delivery

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The relation between epidural anaesthesia during labour and delivery and the subsequent development of back pain is unclear. While our recent prospective study showed no association,¹ two retrospective surveys showed an increased risk of backache associated with epidural anaesthesia.^{2,3} The retrospective studies were conducted long after delivery (12 months to nine years) and response rates were poor (40% to 63%). One possible interpretation is response bias—that is, women who had received an epidural during labour and who later had backache were more likely to respond. Another possibility is recall bias—women given an epidural may have expected backache and therefore may have been more likely to recall it. We performed a follow up study to determine the accuracy of recall of back pain among women who did and did not receive epidural anaesthesia during labour.

Methods and results

In our original study the frequency of self reported low back pain at one day, seven days, and six weeks after birth was prospectively determined in 329 women (164 and 165 in the epidural and non-epidural groups respectively).¹ The prevalence of low back pain was 48% (158/329) on day 1, 22% (73/329) on day 7, and 10% (34/326) at week 6. These prospective reports were considered to represent the "truth." All subjects were contacted by telephone 12 months after delivery (± 1 month) and asked whether they had experienced low back pain on day 1, day 7, and week 6 after childbirth. Interviewer bias was minimised by using a standardised questionnaire on both occasions and by blinding the research nurse to the patients' epidural status. Agreement between the original reports of back pain and the retrospective recall was assessed with the κ coefficient.⁴

The response rate for the follow up telephone interview was 244/329 (74%). Responders and non-responders were similar by epidural status (43 and 42 non-responders in the epidural and non-epidural groups respectively) and in all other respects. Among responders, however, women in the epidural group were more likely than those in the non-epidural group to be white and primiparous. Recall was poor in both groups,

with κ coefficients ranging from -0.09 to 0.25 (table 1), representing poor to fair agreement beyond chance.⁴ The κ coefficients for the two groups were significantly different only at week 6—that is, the 95% confidence interval around the difference did not include 0. However, the sensitivity and specificity of recall were higher for primiparous (*v* multiparous) women and for white (*v* non-white) women. When the confounding effects of parity and ethnicity were taken into account, no significant difference in recall between the two groups was evident.

Comment

Retrospective ascertainment of exposure to a risk factor or onset of disease may be subject to errors in memory. In comparative studies equally poor recall across groups results in non-differential misclassification bias, with distortion of the risk estimate towards the null. Differential misclassification or recall bias—that is, systematic differences in recall between groups—may distort the risk estimate away from or towards the null.⁵

This study found no evidence of recall bias. Recall was similar in the epidural and non-epidural groups, but it was inaccurate. The positive predictive value—that is, the probability of accurate recall of back pain at 1 year—was 56% (47/84) for day 1, 34% (19/56) for day 7, and 13% (4/30) for week 6. These data suggest that response bias might explain the positive findings in the initial retrospective surveys. Nevertheless, because the prospective and retrospective studies differed in several ways the possibility of recall bias in the retrospective studies cannot be excluded. For example, the time frame for recall was shorter in the prospective study. Also, women in the prospective study may have been more likely to recall back pain because they were questioned about it after delivery. Lastly, antenatal backache (an important risk factor) was better quantified in the prospective study.

Funding: None.

Conflict of interest: None.

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(Accepted 11 June 1996)

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BMJ 1996;313:467

Table 1—Accuracy of recall of low back pain at 1 day, 7 days, and 6 weeks after delivery

Recall of back pain	Epidural group (n = 121)			Non-epidural group (n = 123)			Difference (95% confidence interval)
	Back pain	No back pain	Total	Back pain	No back pain	Total	
Day 1:							
Yes	28	21	49	19	16	35	
No	32	38	70	30	57	87	
Total	60	59	119	49	73	122	
Agreement (κ)	0.11			0.18			-0.07 (-0.18 to 0.18)
Day 7:							
Yes	12	19	31	7	18	25	
No	13	75	88	17	81	98	
Total	25	94	119	24	99	123	
Agreement (κ)	0.25			0.11			0.14 (-0.13 to 0.41)
Week 6:							
Yes	4	11	15	0	15	15	
No	11	92	103	8	99	107	
Total	15	103	118	8	114	122	
Agreement (κ)	0.16			-0.09			0.25 (0.02 to 0.48)