Maternal State-Trait Anxiety Assessment and Labour Epidural Analgesia.

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Introduction:

Anxiety has been shown to influence the perception of both acute and chronic pain. We sought to investigate the relationship between maternal state and trait anxiety, and epidural analgesia in patients undergoing term induction of labour using the State Trait Anxiety Inventory (STAI-Y) assessment. The STAI-Y is a forty construct questionnaire, twenty State and twenty Trait, with a score of 20 to 80 possible for each test respectively. The State constructs measure the respondent's feelings in the moment, while the Trait constructs measure anxiety as a long-standing characteristic.

Methods:

This was an observational study of healthy primiparous women undergoing induction of labour at term and requesting epidural analgesia in labour. Upon recruitment to the study, prior to the onset of labour, patients completed the STAI-Y form. Following transfer to the labour ward, a lumbar epidural was sited at the patients' request. Pain scores and cervical dilation at the time of epidural request were recorded. Pain scores were recorded hourly thereafter until delivery. The number of PCEA demands requested and delivered, the requirement for clinician delivered rescue boluses, the total dose of levobupivacaine and fentanyl administered, and the mode of delivery was recorded. Patients who required a re-site of the epidural catheter within the first hour were excluded from the analysis. The maternal satisfaction score with a maximum value of 100 was recorded one day after delivery, specifically in relation to labour analgesia.

Results:

Fifty-six mothers completed the STAI-Y assessment. Two patients failed to complete the Trait Anxiety Inventory and were excluded from the Trait Anxiety analysis. The STAI-Y score was calculated with reversed scoring for anxiety-absent statements. A cut-off score of 40 was used to distinguish between those women with high state and trait anxiety. There were no differences in age, weight or gestation between the groups. Twenty-two patients (40.7%) had a State Anxiety score ≥40 and 10 patients (18.5%) had a Trait Anxiety score ≥40. There was no significant difference in primary and secondary outcomes (Table 1 and Table 2)

State-Trait Anxiety Questionnaire

I FEEL CALM.	I FEEL PLEASANT.
I FEEL SECURE.	I FEEL NERVOUS AND RESTLESS.
I FEEL TENSE.	I FEEL SATISFIED WITH MYSELF.
I FEEL STRAINED.	I WISH I COULD BE AS HAPPY AS OTHERS SEEM TO BE.
I FEEL AT EASE.	I FEEL LIKE A FAILURE.
I FEEL UPSET.	I FEEL RESTED .
I AM PRESENTLY WORRYING OVER POSSIBLE MISFORTUNE.	I FEEL CALM , COOL & COMPOSED.
I AM SATISFIED.	I FEEL THAT DIFFICULTIES ARE PILING UP SO THAT I CAN NOT OVERCOME THEM.
I AM FRIGHTENED.	I WORRY TOO MUCH OVER SOMETHING THAT REALLY DOESN'T MATTER.
I AM COMFORTABLE.	I AM HAPPY.
I AM SELF CONFIDENT.	I HAVE DISTURBING THOUGHTS.
I AM NERVOUS.	I LACK SELF CONFIDENCE.
I AM JITTERY.	I FEEL SECURE.
I AM INDECISSIVE.	I MAKE DECISIONS EASILY.
I AM RELAXED.	I FEEL INADEQUATE.
I AM CONTENT.	I AM CONTENT.
I AM WORRIED.	SOME UNIMPORTANT THOUGHTS RUNS THROUGH MY MIND AND BOTHER ME.
I AM CONFUSED.	I TAKE DISAPPOINTMENTS SO KEENLY THAT I CANT PUT THEM OUT OF MY MIND.
I AM PLEASANT.	I AM A STEADY PERSON.
I AM STEADY.	I GET IN A STATE OF TENSION OR TURMOIL AS I THINK OVER MY RECENT CONCERNS AND INTERESTS.
	SCORE 1- ALMOST NEVER. SCORE 2- SOMETIMES. SCORE 3- OFTEN. SCORE 4- ALMOST ALWAYS.

Conclusion:

Although 40.7% of patients undergoing elective induction of labour had a high State Anxiety Score, this did not impact upon their pain scores prior to labour analgesia. Likewise, a high Trait Anxiety Score indicating a long-standing tendency toward anxiety did not influence pain in labour. In the setting of effective epidural labour analgesia, maternal state or trait anxiety per se does not influence the number of PCEA requests or the need for additional clinician administered boluses. Heightened levels of anxiety do not appear to influence labouring patients pain scores before or after epidural analgesia and should not influence anaesthesia-provider decision-making when assessing the efficacy of labour epidural analgesia.

State Anxiety Inventory Results

	>40 (n=22)	<40 (n=34)	p
Age	33 [30 – 39]	32 [28 – 34]	0.24
Weight	70 [60 – 93]	73 [68 – 90]	0.59
Gestation	41 [39 – 42]	40 [39 – 41]	0.41
Mode of Delivery			
SVD	7 (32)	15 (44)	0.49
Instrumental	7 (32)	8 (24)	
Cesarean Section	8 (36)	11 (32)	
Baseline Pain Score	7 [0 – 8]	6 [0 – 8]	0.87
PCEA Demand	10 [3 – 15]	6 [4 – 10]	0.32
PCEA Delivered	5 [2 – 9]	4 [2 – 6]	0.31
Clinician Rescue Bolus	10 (46)	8 (24)	0.14
Total Levobupivacaine (mg)	99 [74 – 113]	95 [71 – 122]	0.43
Total Fentanyl (mcg)	284 [226 – 314]	289 [239 – 306]	0.96
Maternal Satisfaction	95 [78 – 100]	97 [88 – 100]	0.56

Trait Anxiety Inventory Results

	>40 (n=10)	<40 (n=44)	p
Age	35 [31 – 40]	32 [26 – 34]	0.06
Weight	76 [58 – 103]	71 [67 – 91]	0.91
Gestation	40 [40 – 42]	40 [39 – 41]	0.25
Mode of Delivery			
SVD	2 (20)	19 (43)	0.30
Instrumental	4 (40)	11 (25)	
Cesarean Section	4 (40)	14 (38)	
Baseline Pain Score	5 [0 – 7]	7 [0 – 7]	0.25
PCEA Demand	10 [6 – 15]	6 [2 – 11]	0.14
PCEA Good	7 [4 – 8]	4 [2 – 6]	0.13
Clinician Rescue Bolus	5 (50)	12 (27)	0.26
Total Levobupivacaine (mg)	105 [75 – 136]	95 [69 – 118]	0.14
Total Fentanyl (mcg)	302 [233 – 373]	278 [236 – 302]	0.16
Maternal Satisfaction	95 [80 – 100]	97 [80 – 100]	0.90

Data presented as median [interquartile range] or mean (standard deviation)