Non-Pharmacologic Labour Pain Relief

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Many women would like to avoid pharmacological or invasive methods of pain management in labour and this may contribute towards the popularity of complementary methods of pain management. This review examined currently available evidence supporting the use of alternative and complementary therapies for pain management in labour.

To examine the effectiveness of complementary and alternative therapies for pain management in labour on maternal and perinatal morbidity.

The trials included three trials of hypnosis (n = 189), one involving audio-analgesia (n = 25), one involving (n = 22), and one trial of music (n = 30). Women receiving hypnosis were more satisfied with their pain management in labour compared with controls (RR 2.33, 95% CI 1.55 to 4.71). No differences were seen for women recieving , music or audio analgesia.

Hypnosis may be beneficial for the management of pain during labour. However, few complementary therapies have been subjected to proper scientific study

Keywords : *Pain, Hypnosis, Music therapy*

J Med Assoc Thai 2004; 87(Suppl 3): S203-6

Labour presents a physiological and psychological challenge for women. The onset of labour can be a time of conflicting emotions; fear and apprehension can be coupled with excitement and happiness. Tension, anxiety and fear are factors contributing towards women's perception of pain and may also affect their labour and birth experience[1]. Pain associated with labour has been described as one of the most intense forms of pain that can be experienced. Pain experienced by women in labour is caused by uterine contractions, the dilatation of the cervix and, in the late first stage and second stage, by stretching of the vagina and pelvic floor to accommodate the baby. However, the complete removal of pain does not necessarily mean a more satisfying birth experience for women. Effective and satisfactory pain management needs to be individualised for each woman.

Many women would like to avoid pharmacological or invasive methods of pain relief in labour and this may contribute towards the popularity of complementary methods of pain management[2].

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Techniques that enhance descending inhibitory pathways

1. Attention focusing and distraction

Many methods for coping with pain involve the conscious participation of the individual in attention focusing or mind diverting activities, designed to 'take one's mind off the pain'[3].

Attention focusing may be accomplished by deliberate intentional activities on the part of the labouring woman. Examples include attention to verbal coaching, visualization and self-hypnosis, performing familiar tasks (such as grooming and eating), concentration on a visual, auditory, tactile, or the stimulus, and patterned breathing. While patterned breathing continues to be taught in many childbirth education programs, no controlled studies have evaluated its effectiveness. The results of a small study of patterned breathing suggest that it may increase the mother's fatigue if begun too early in labor, and should be restricted to active labour[3].

Distraction may be a more passive form of attention focusing, with stimuli from the environment (television or a walk out of doors) or from other people drawing a woman's attention away from her pain. It does not require as much mental concentration as

deliberate attention-focusing measures, and is probably ineffective when pain is severe. Attention focusing and distraction are usually used in combination with other strategies[3].

2. Hypnosis

Hypnosis was introduced into obstetrics in the early nineteenth century and has been used in various ways ever since. It is defined as 'a temporarily altered state of consciousness, in which the individual has increased suggestibility'. Under hypnosis, a person demonstrates physical and mental relaxation, increased focus of concentration, ability to modify perception, and ability to control normally uncontrollable physiological responses, such as blood pressure, blood flow, and heart rate[3].

Hypnosis is used in two ways to control pain perception in childbirth: self - hypnosis and post-hypnotic suggestion. Most hypnotherapists teach self-hypnosis, so that women may enter a trance during labor and reduce awareness of painful sensations. Among the techniques used are: relaxation; visualization (helping the woman imagine a pleasant, safe scene and placing herself there, symbolizing her pain as an object that can be discarded, or picturing herself as in control or free of pain); distraction (focusing on something other than the pain); and glove anesthesia (through suggestion, creating a feeling of numbness in one of her hands, and then spreading that numbness wherever she wishes by placing her numb hand on the desired places of her body). The woman is taught to induce these techniques herself; only rarely do hypnotherapists accompany their clients in labour[3].

Other therapists rely almost completely on post-hypnotic suggestion. These hypnotherapists do not teach their clients to enter a hypnotic state routinely during labor, because they will not need to. Most women, they claim, will be comfortable as a result of the effectiveness of the post-hypnotic suggestions. Exceptions to this are circumstances such as forceps delivery or episiotomy and repair, for which it would be necessary to go into a trance[3].

Three studies comparing the use of hypnosis with a control group were included in the review[4-6]. One trial reported on maternal satisfaction for pain relief. The hypnosis group reported greater satisfaction than the control group (RR 2.33, 95% CI 1.15 to 4.71 (125 women))[4].

All three trials reported on use of pharmacological pain relief in labour. In the Freeman trial, there was no difference in the use of pain relief between women receiving hypnosis and the control group (RR 0.88, 95% CI 0.33 to 2.24, (65 women)). Women receiving hypnosis used less anaesthesia than women in the control group (RR 0.65, 95% CI 0.38 to 1.11 (42 women))[6]. Fewer women in the hypnosis group used narcotics than in the control group (RR 0.21, 95% CI 0.08 to 0.55, (60 women))[5]. Using a random effects model the meta-analysis for the three trials reporting on this outcome. The meta-analysis found no difference in the need for pain relief between groups (RR 0.54, 95% CI 0.23 to 1.23 (167 women))[7].

Two trials reported on spontaneous vaginal delivery[4,5]. They found more women had a spontaneous vaginal delivery in the hypnosis group than in the control group (RR1.38, 95% CI 1.13 to 2.47 (125 women)). There were no difference in instrumental delivery between groups (RR 0.56, 95% CI 0.22 to 1.44 (65 women))[4].

Two trials reported on the use of augmentation with oxytocin [5,6]. Women in the hypnosis group reported less use of oxytocin than women in the control group (RR 0.31, 95% CI 0.18 to 0.52 (102 women)).

The mean duration of labour was 12.4 hours in the hypnosis group compared with 9.7 hours in the control group ($p < 0.05$) (no standard deviation reported)[4].

Neonatal outcomes were reported in two trials. There was no difference between groups in admission to neonatal intensive care (RR 0.18, 95% CI 0.02 to 1.43 (42 babies))[6]. Apgar scores at five minutes for the hypnosis group was 9.30 (standard deviation (SD) 0.65) and for the control group was 8.7 (SD 0.50)[5].

Current available evidence suggests hypnosis may be effective in reducing pain in labour. Maternal satisfaction with pain management was greater among women receiving hypnosis. Although the three included trials reported reduced use of a pharmacological pain relief in labour, when adjusting for heterogeneity between trials there was insufficient evidence of reduced use of pain relief among women receiving hypnosis. Other promising benefits from hypnosis appear to be increased vaginal delivery, and reduced use of oxytocin. One trial reported an increased duration of labour among women receiving hypnosis. There was no evidence of any adverse effects on the neonate. Further research is required[7].

3. Music and audio-analgesia

Music and audio-analgesia are used to control

pain in numerous situations, including dental work, post-operative pain, treatment of burns, and occasionally in childbirth. Many childbirth educators use music in antenatal classes to create a peaceful and relaxing environment, and also advocate it for use during labour as an aid to relaxation.

One trial on the use of music was included in the review[8]. This trial, carried out in the United States, randomised 30 primigravid women to receive standard psychoprophylactic child birth instruction antenatally and music, or standard psycho-prophylactic instruction only. The trial examined the effect of listening to music on the frequency of pain medication in labour. The experimental group used tape-recorded music during conditioning exercise segments and when practising relaxation/breathing techniques and had the taped music available during labour. No baseline data were presented for the two groups. It was unclear if any women were lost to follow up.

The data from the trial were not in a suitable form for entry into the table for comparisons[8]. There was no statistical difference in the frequency of pain medication use between groups, with 12 episodes of pain medication use in the experimental group and 19 in the control group.

There is insufficient evidence about the effectiveness of music therapy on pain management in labour. Further research is required[7].

One trial of audio-analgesia was included in the review[9]. The trial undertaken in England, recruited 25 women; 24 women completed the trial. Women were randomised to receive audio analgesia which consisted of 'sea noise' white sound set at 120 decibels, or to the control group who received sea noise at a maximum 90 decibels. The intervention began when women were in the first stage of labour. All women received routine care and the midwife offered the woman pain relief if she considered pain relief was inadequate. There was no description of baseline characteristics. The trial reported on the midwife's perception of pain relief and the woman's satisfaction with pain relief from 'sea noise'.

There is insufficient evidence about the effectiveness of audio analgesia on pain management in labour. Further research is required[7].

4. Biofeedback

Trials of electromyographic biofeedback taught during prenatal classed failed to demonstrate any significant effect on the use of pharmacological analgesia or other interventions during childbirth[3].

Discussion

The data available suggest hypnosis may be helpful therapies for pain management in labour. The efficacy of audio-analgesia, bio-feedback and music have not been established. Recommendations for practice cannot be made until further research has been undertaken.

Further randomised controlled trials of complementary therapies are needed. Consideration could be given to the use of preference trials where women can choose their treatment of choice within a trial context. Preference trials vary in their design; they retain the advantages of randomised trial but allow the interaction between subject's preferences and outcome to be assessed. However, the practical advantages of establishing and including patient preferences in trials has not been fully established.

All future randomised trials must be adequately powered and evaluation of complementary and alternative therapies for pain management in labour should consider including clinically relevant outcomes such as those described in this review. There is a need for improving the quality and reporting of future trials. In particular, consideration should be given in the analysis and reporting on the person providing the intervention for example their training, length of experience and relationship to the woman.

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