NON-PHARMACOLOGICAL METHODS OF LABOUR PAIN MANAGEMENT

NEFARMAKOLOGICKÉ METODY TIŠENÍ BOLESTI PŘI PORODU

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Abstract

The article focuses on labour pain and possibilities of pain management with the use of non-pharmacological methods. In the introduction pain in general is defined, consequently the definition of labour pain is provided. The article mainly focuses on methods, such as psychophysical preparation for childbirth, hypnoses, acupuncture and acupressure, transcutaneous electric stimulation of nerves, therapeutic touch and aromatherapy. Apart from these methods the article also mentions massage and music therapy.

Key words: pain, labour pain, non-pharmacological methods of pain management

IASP, (2012), i.e. International Association for studies of pain characterizes pain as unpleasant sensory and emotional experience connected with acute or potential tissue damage. McCafffery (1979) defines pain as anything what a patient describes as pain, perceives it as unique, personal, subjective, multidimensional experience that is influenced not only by the sex of the patient (Cepeda, Carr. 2003), but also by his/her previous experience with pain, emotions (fear, sadness, joy), his/her faith and culture as well as his/her relationship to pain (Dahl, Kehlet, 2006).

Labour pain is defined as natural, it generally accompanies every childbirth and although it is classified as physiological, many women describe it as unbearable (Pařízek et al., 2012). Leifer (2004) describes labour pain as part of normal physical process, while a woman expects pain at childbirth and can prepare herself for it during pregnancy, labour pain is temporary and ends with the actual birth of the child. Pařízek et al. (2012) describe labour

pain similarly to Leifer (2004), as the only painful reaction to a physiological stimulus and they classify it as the most intensive painful experience in human life. The IASP definition is valid even for labour pain, however, it is a special category of pain, in which its physiological importance interferes with pathophysiological mechanisms (Pařízek et al. 2012). Labour pain can be perceived as beneficial as it leads a woman to stop all other activities, to seek help, makes her try changing different positions that can make the delivery easier (Ratislavová, 2008). Leifer (2004) names four factors that influence labour pain, i.e. dilatation and shortening of the cervix; reduced blood supply into the uterus during contractions; pressure of the foetuses on the pelvic floor and stretching of the vagina and perineum. In the first labour phase it is the visceral pain, localized in the bottom segments of the uterus that is caused by stretching and ischemia of the muscle fibres in the uterus (Tomáš, 2000). In the second labour the pain is caused by the dilatation of the lower uterine segment and uterine contractions. In addition, the pressure of part of the foetus on the sensitive structure of the pelvis is growing, which causes stretching of the muscles of the pelvic floor and perineum, we are talking about somatic pain (Pařízek, 2006).

To reduce the pain at childbirth it is possible to use pharmacological or non-pharmacological methods. For pharmacological pain management we can include inhalation method in the form of Entox, use of Pethidine or Nalbuphine, epidural analgesia and subarachnoid analgesia, etc. This article, however, focusses on non-pharmacological methods that are beneficial not only for women who prefer natural birth.

These methods include support during the labour; use of different positions; hydrotherapy; manual, quasi-manual and related therapies (massage, effleurage, aromatherapy, therapeutic touch, acupuncture and acupressure, TENS – transcutaneous electric nerve stimulation); techniques working with the body and mind (relaxation, hypnotherapy, music, yoga, biofeedback, controlled imaginations); homeopathy, the environment in which the woman is giving birth and last but not least we need to mention also the psychophysical preparation for labour (Mander, 2014). For the purposes of this article the focus will be targeted at selected methods of pain management, such as psychophysical preparation for childbirth, hypnoses, acupuncture and acupressure, transcutaneous electric nerve stimulation, therapeutic touch, aromatherapy, massage and music therapy.

With regards to the demandingness of the period of life at and after delivery, it is suitable for women to undergo *the psychophysical preparation for childbirth.* The main purpose of this preparation is the positive stimulation of mind (psyche) of a woman in labour and acquiring as

much information as well as skills as possible that will enable the woman and her partner to manage pregnancy, labour as well as puerperium (Bašková, 2015).

Bašková (2015) defines psychophysical preparation for childbirth as a specific educational programme that prepares a pregnant woman and her partner to successfully manage the parental role. One of the lessons from the preparation course is also devoted to labour pain.

The original purpose of preparing a woman for childbirth was the reduction of labour pain (Hudáková, Kopáčiková, 2017). Roztočil et al. (2008) state that the goal of the preparation for childbirth shall not be elimination of labour pain or obstetric complications, but it should lead the woman to be able to deal with the pain during the labour process. Influencing labour via active preparation for childbirth was based on the existence of a certain dependence on cultural factors, as in all cultures certain rituals or methods for managing pan are used during the delivery process (Ratislavová, 2008). Ratislavová (2008, p. 49) further mentions that *labour was always perceived as a demanding life situation one needs to get ready for, no matter if it is just through passing life wisdoms from one generation onto another.* Mander (2014) describes prior inborn abilities of women with regards to childbirth and is questioning the benefits of any kind of training. In connection with the antenatal preparation and with the topic of pain, it is important to think about how women are prepared for pain during the training, how do we talk about labour pain and how much it is emphasised (Mander, 2014).

Hypnoses is a time-demanding method reducing painfulness thanks to focussing on more pleasant experience, while the woman is in a reduced level of consciousness (trance) (Pařízek et al., 2012; Simkin, 2000). According to Gentz (2001) hypnoses comes from the Greek word hypnos (i.e. sleep), which in reality is not a real sleep, however, a state of focussed concentration, during which the woman can be not fully conscious, however, still aware of the environment around her. Hypnoses can be helpful as it can reduce fear, anxiety and can influence even the perception of pain (a woman under hypnoses evaluates pain as less strong) (Tournaire, Theau-Yonneau, 2007). The preparation for the use of hypnoses at delivery is important already during pregnancy (Ratislavová, 2008). Ratislavová (2008) as well as Pařízek et al. (2012) state that in order to bring a woman into the state of reduced consciousness you need an experienced expert (hypnotiser), on the other hand Simkin (2000) mentions that a woman is able to reach such state of mind alone.

According to Monganová (2010) a woman giving birth with the use of the method called hypnobirthing, uses natural knowledge that her body has about labour and thanks to that she is able to relax at delivery and co-operate not only with her own body, but also with the child.

Acupressure as well as acupuncture belong among foundation stones of Traditional Chinese Medicine that is characterised by the holistic approach to man, i.e. it perceives a man as a whole not only as a summary of individual elements (Fiala, 2016). In case of acupressure we talk about a method using fingertips to perform a massage of acupuncture points (Mander, 2014). Fiala (2016) describes acupressure as a stimulation of acupuncture points via pressure of fingers or other parts of a hand such as an elbow for instance. Andreoli et al. (2008) refer to it as to acupuncture with no needles. Tournaire and Theau-Yonneau (2007) explain the effects acupressure stimulation with the production of endorphins, improvement of the blood flow and balancing harmony between yin and yang principles through which acupressure is able to maintain normal body functions and provides comfort (Chung et al. 2003). The points most frequently used at labour are the Che-gu pint (i.e. LI4) and the spleen point Nr. 6 (SP 6) (Simkin, 2000). Hamidzadeh et al. (2012) evaluated the effect of acupressure point LI4 on a sample of women in the active phase of labour and came to the conclusion that LI was successful in reducing pain and the length of the delivery, the participants of the study were satisfied, and no negative effect was recorded. Can and Saruha (2015) came to similar conclusion. In their survey they used acupressure in the same acupuncture point, however, stimulated it through ice massage (using balloons filled with water). The advantage of acupressure is that the skin stays unharmed, unlike during acupuncture, however, the energetic stimulus is shorter and weaker (Górnicka, 2011). Even Andreoli et al. (2008) refer to it as to a less invasive method because the body is stimulated through fingertips and not needles. This technique does not have to be performed by a trained or experienced therapist, however, it can be used even by laics (woman´s accompaniment during labour).

Transcutaneous electric nerve stimulation (TES) is a method that was invented consequently to the gate theory of pain (Mander, 2014). Mander (2014) mentions that there are very few contraindications for the use of TENS during childbirth and further does not specify any contraindications. Pařízek et al. (2012) describe only one contraindication of using TENS and that is the cardiac pacemaker implanted to a woman in labour. The device for TENS consists of four electrodes, a generator of DC power pulses and an amplifier (Mander, 2014; Simkin, 2000). Stimulating electrodes attached to the skin of the woman in labour indirectly stimulate the peripheral nervous system (Rokyta et al, 2015). During the stimulation through TENS the woman notices pleasant tingling (Pařízek et al, 2012). The authors (Mander, 2014; Pařízek et al, 2012; Simkin, 2000) find the benefit of TENS especially in the fact that a woman can control the stimulation all by herself.

Another possibility of pain management during the delivery is *the therapeutic touch.* Grabowska (2001) defines therapeutic touch as a two-way flow of energy when the energy is transmitted through the hand of a therapist, she compares this process to conducting electricity, i.e. the healthy therapist is passing over the energy surplus to the woman in labour, who is thus adjusting its lack.

Kreiger and Kunz (2004) describe therapeutic touch as cleaning (repair) of the energetic field of a living creature (man). Researches on the use of the therapeutic touch in midwifery are missing, however (Mander, 2014).

On the contrary Tournaire and Theau-Yonneau (2007) describe therapeutic touch as an important element during the delivery, which enables communication with the woman and is assuring her about good care. Painful contractions can be reduced through the pressure of the hand on the back, abdomen, hips, small of the back as well as perineum. Whether the touch is will be perceived as positive or not, depends on the person, who is providing it. It is positively perceived when provided by an acquainted person, it is determining if it is the husband, a friend, the midwife or the doctor (Penny, 1979). Tournaire and Theau-Yonneau (2007) mention reduction of anxiety with women in labour, who were provided therapeutic touch.

Among very simply techniques which contribute to pain management, is *a massage.* Massage can be classified according to the form of movement, its direction and effect according to the movement of the hands and use of different intensity of pressure to mild rubbing (effleurage), kneading (petrissage) and deep rubbing (friction) (Storck, 2010). Radnovich (2005) also mentions tapping and vibrations.

A woman in labour can use a massage for reducing pain during childbirth in the form of a self-massage or a massage conducted by her partner or another caregiver. It is a sensitive form of communication thanks to which the level of stress by the woman in labour can be reduced (Evans et al., 2001).

Aromatherapy belongs to alternative treatment methods. Its basic tools are essential oils or other extracts made out of essential oil plants (Noe, 2014). Aromatherapy can very often be combined with the technique of a massage, its purpose is to reduce anxiety, stress, inducing relaxation and creating feeling of tranquillity (Tournaire and Theau-Yonneau, 2007). Already Hippocrates described the effect of essential substances on human organism. He noticed that some substance act like a protection against infectious diseases (Worwood, 2012). Aromatherapy can be used in the form of a bath, foot bath, inhalation, compress or in an aroma lamp (Mander, 2014). Burns et al. (2000A, 2000b) used aromatherapy in their study with women in labour and state that its use during the delivery reduced the need for further

relieves from pain and thanks to it women in labour indicated lower levels of stress, anxiety and recorded feeling of tranquillity.

For reduce the pain at delivery it is also possible to use homeopathy. The founder of homeopathy is a German doctor Samuel Hahnemann. His tests lead him to the conclusion that like cures like (Moskowitz, 2008). Homeopathic remedies stimulate the body to cure itself (Mander, 2014). Same as aromatherapy, homeopathy can also be used in the preparation for childbirth and further also during the process of labour as well as during the puerperium. A woman in labour should, however, consult the treatment with an experienced homeopath or midwife that is engaged in homeopathy.

Stadelmann (2009) states that a pregnant woman should use homeopathy only in case that she really needs it, i.e. she suffers from some physical or mental problems. The homeopath always considers the whole human being and does not separate mental problems from physical manifestation of the disease (Stumpf, 2009).

Music therapy is another possibility of influencing labour pain. Pařízek et al. (2012) describe audio-analgesia as a method that reduces the feeling of pain thanks to the changes of activity in the cerebral cortex, which is managed through stimulating the auditory cortices with a noise produced by a machine. Mander (2014), however, considers this method as old-fashioned and currently unused, however, he admits that music can help the woman in labour to manage labour pain, especially because it is able to distract her attention, deflect her focus on the watching the time and also to lift her spirit. Moreover, women in labour can also dance to the music and they can thus naturally influence the childbirth. Mander (2014) further states that music is useful especially because of its rhythm and tempo that help the woman in labour to regulate her breath and make relaxing easier.

Marwick (1996) describes the use of music during the third trimester of pregnancy, when the woman and her partner choose their favourite music that they use during the individual phases of childbirth. Women that were getting ready for labour and used music therapy required analgesia only in half of the cases (Marwick, 1996).

Randomised controlled study carried out by Phumdoung and Good (2003) states reduction of pain by women listening to soft music (with no words) and recommend using listening to music for reduction of pain during the active phase of childbirth when contractions are strong. Liu et al. (2010) came to similar conclusion. They describe reduction of pain and anxiety by women using therapy by music in the active phase of delivery.

Conclusion: Currently women tent to experience labour in a natural way. They come to maternity hospital with their wishes to experience childbirth expressed in their birth plan.

Among these wishes there are also the above mentioned non-pharmacological methods of pain management. A midwife has an irreplaceable role in pain management and is able to use her expertise in this field. In case of pharmacological pain management, the expertise must come out of the doctor´s office.

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