

Searching for Medical Substances Safe for Mother and Child, Facilitating the Delivery of Pain Management and Decreasing Exhaustion—Evaluation of Obstetric Gel by Pregnant Women

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■ ABSTRACT:

The aim of the present study was to determine whether applying obstetric gel, a noninvasive method of pain management that is safe both for the mother and the child, during labor influences delivery satisfaction by facilitating pain management and decreasing exhaustion. Forty-seven primiparous women were included in the study: 23 on whom during the delivery gel was used and 24 whose delivery proceeded without the use of a gel (control group). The following research tools were used for the evaluation of satisfaction with the course of the delivery: Visual Analogue Scale (VAS), self-authorship survey, and the State-Trait Anxiety Inventory. There were no significant differences in intensification of pain in the first and second periods of delivery, exhaustion after delivery and intensification of pain in the second period of delivery, and increased anxiety between the study group and the control group. Our results suggest that application of obstetric gel during the first and second period of delivery does not significantly influence women's satisfaction with the course of delivery.

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Delivery is an exceptional, subjective experience in the life of a majority of women. The act of giving birth is a stressful event for most women, causing anxiety regarding delivery pains and concern for the health of the newborn

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baby. In psychology, gynecology, and obstetrics, perception of the delivery by women is defined as delivery satisfaction. This is a complex and multidimensional notion, referring to diverse factors (e.g., experienced pain and feeling control over it, beliefs pertaining to quality of medical care, and level of anxiety) that influence perception of the delivery as positive or negative, both in the emotional sphere as well as in the somatic one (Bramadat & Driedger, 1993; Brown & Lumley, 1994; Christiaens & Bracke, 2007; Goodman, Mackey, & Tavakoli, 2004).

In gynecology and obstetrics many medical substances are used to increase women's comfort and relief during delivery. Labor is divided into three stages. The first stage is associated with visceral pain caused by the contractions and dilation of the uterus and cervix. In the second stage (beginning from this point up to the completion of delivery), the pain is mainly somatic as a result of the fetus in the birth canal, causing distention and tearing of the vaginal and perineal tissues (Wong, 2009). The third stage of labor is the postpartum period. Generally, the methods of relieving birth pain may be divided into pharmacologic and nonpharmacologic ones. When it comes to invasive methods of pain relief, an important occurrence in the history of obstetrics was the introduction of such substances as morphine and chloroform in 1792 and 1834 and scopolamine in 1902, which were all used in labor pain relief (Marland & Rafferty, 1997). Anesthetics during labor were first introduced in Germany, and soon they started to be used in the United Kingdom and United States. Unfortunately, it soon became apparent that anesthetics induce pregnant women's delirium and negatively affect the newborn's nervous system, causing depressive symptoms that result in somnolence and deterioration of pulmonary function after the delivery (Marland & Rafferty, 1997). Nowadays, the newest and safest method of labor pain relief is epidural anesthesia. It is also the most effective method of labor pain relief. However, it also has its drawbacks; its implementation is complicated and has to be performed by an anesthesiologist. Moreover, it may suppress contractions and prolong labor. Furthermore, certain health problems and illnesses in pregnant women are considered a contraindication for using anesthesia during labor (e.g., thrombocytopenia, pulmonary hypertension, amyotrophic lateral sclerosis).

It should be stressed that in recent years there has been an intensive development of a trend promoting the advantages stemming from natural delivery, as opposed to the instrumental or operational birth, common in industrialized countries. The term *natural delivery* itself was coined in 1933 by an obstetrician,

Grantly Dick-Read, in his book *Natural Delivery* (Moscucci, 2003). Natural delivery is one in which the child is born as a result of the mother's natural uterine contractions and the functioning of hormones such as oxytocin, adrenalin, and endorphin. The baby is born without any medical or pharmacologic aid or intervention. The use of oxytocin, anesthetics, or forceps disqualifies a delivery from fitting the definition. Together with the development of the aforementioned trend, there has been a great advance in nonpharmacologic methods of labor pain relief, which are safe and allow women to participate actively and consciously in the delivery and to control the process. Among the nonpharmacologic methods of labor pain relief used commonly in Europe and the United States, the following may be enumerated: breathing techniques, vertical labor positions, various kinds of massages, warm and cold compresses used in the lumbosacral spine area and abdomen, transcutaneous electrical nerve stimulation (TENS), acupuncture, and hydrotherapy (Piasek, Adamczyk-Gruszka, Radomski, Koźmińska, & Walczyk, 2012; Simkin & O'Hara, 2002). The results of the present study indicate, however, that not all of these methods exhibit the same effectiveness, and their efficacy may be also subject to change because of difficulties in measuring the frequency with which some of these methods (e.g., breathing techniques) are used and also because of the individual differences between women, including whether a woman is a primipara or is giving birth to another child (Brown, Douglas, & Flood Plaster, 2001).

The present study evaluates for the first time the effectiveness of obstetric gel as a noninvasive and easy to use method of increasing women's satisfaction during labor because of the gel's ability to relieve labor pain and exhaustion. From a point of view of kinetics, friction forces between the child and the vaginal part of the birth canal are opposing the force of myospasms of the womb and can hinder delivery. Inside the birth canal, obstetric gel is a means of reducing friction (Riener et al., 2009; Schaub et al., 2008; Zhuk & Pekhnyo, 2009). It is worthwhile emphasizing that many pharmacologic means of reducing delivery pains and facilitating the course of delivery exist whose application was abandoned in gynecology and obstetrics as a result of complications they can cause, whereas obstetric gel does not contain active pharmaceutical substances. Therefore it has a positive safety profile for the mother and brings no risk to the health of the child. In the present study, the authors examine an obstetric gel containing polyacrylic acid as a bioadhesive agent. A study conducted on use of the gel in Switzerland in 2005

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