

BREASTFEEDING AND HUMAN LACTATION RESEARCH

The Management of Labor and Delivery and its Implications for Breastfeeding

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The main professional organizations of obstetrical and pediatric care providers in the United States and Puerto Rico have issued official position papers in favor of breastfeeding. Routine labor and delivery practices, however, constitute frequent barriers for the initiation, type and duration of breastfeeding. Many

of these practices, moreover, lack the scientific basis to justify their routine use. We analyze in this article some of the most common obstetrical practices and their impact on breastfeeding.

Key words: Breastfeeding, Labor, Delivery, Management, Practices.

The publication, in July 2000, of the Educational Bulletin on breastfeeding by the American College of Obstetricians and Gynecologists (ACOG), represents an important step forward in the struggle for the promotion and the protection of breastfeeding among mothers in the United States and in Puerto Rico (1). This document joins ACOG with the American Academy of Pediatrics (AAP), which presented in 1997 its official public policy on breastfeeding, in defense of exclusive breastfeeding until 6 months of age, and of prolonged breastfeeding at least until 1 year of age (2). The ACOG Bulletin specifies the nutritional and immunological benefits of human milk, its antimicrobial properties, its factors of growth and cellular differentiation, its protective effect against SIDS, juvenile diabetes, Crohn's disease, ulcerative colitis, other gastrointestinal diseases, lymphomas and allergies, as well as its contribution to superior cognitive development (1).

The benefits of breastfeeding for the mother are likewise mentioned, including diminished postpartum bleeding, an improved sense of well-being, a reduced risk of ovarian and breast cancer, and a diminished incidence of osteoporosis and hip fractures in old age. Breastfeeding

is also offered as a very efficacious birth control method for 6 months in mothers who are using full breastfeeding and in whom menstruation has not returned. The benefits for family and society, as well as the ecological advantages, are also presented in this excellent document (1).

In view of the overwhelming body of evidence available regarding the superiority of breastfeeding over artificial milk for the raising of children, for their mothers, for the family and for society in general (3-14), all reproductive health care providers should be staunch defenders of breastfeeding, and none of our actions should hinder or obstruct the initiation and duration of breastfeeding among the population which we serve (15). An analytical exam of our daily practices for the management of labor and delivery, however, reveals contradictions and multiple situations that could, in effect, turn into great obstacles for breastfeeding (16). When we study the scientific evidence, or lack thereof, which supports a great number of our daily hospital obstetrical practices, we are forced to question them and suggest significant modifications and even elimination of the great majority of them.

In the developed western world the management of labor and delivery has been affected by variable degrees of medicalization. In Europe, with the exception of Holland, deliveries generally occur in hospitals, with the availability of high technology resources. Excessive medicalization is controlled, however, by strategies that include, among others, the widespread use of the midwife (17). In the United States, on the other hand, the degree of medicalization is frequently excessive, hospital delivery with an obstetrician is the paradigm and delivery is

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conceptualized as a disaster waiting to happen (17-18). This model, with pregnancy as a disease and delivery as a surgical intervention, is what generally prevails in Puerto Rico. It is easy to understand how medical interventionism has replaced the wise patience of old, when we still believed that nature and the mother herself generally knew how to manage labor and delivery if we gave them a chance. We limited ourselves to watching the process to ascertain that all was going well and interventions were only carried out when really necessary.

Even in Europe, where excessive medicalization has not reached such proportions, a study by the World Health Organization (WHO) revealed that, in the majority of 23 countries studied, no option was offered to women regarding routine obstetrical practices as shaving, maternal position for labor and delivery, the use of analgesia/anesthesia, the use of the electronic fetal monitor, and the practice of episiotomy, among others (17). Cloney and Donowitz reported in 1986 on how some routine hospital practices are not based on scientific evidence but on expensive and restrictive traditional rituals which are maintained in spite of evidence to the contrary (19).

Respect for the importance of the interaction between the mother, the neonate and the family, on the other hand, has been defended and its consequences studied by pioneers like Klaus for over three decades (20). The importance of continuous emotional and physical support by a trained laywoman and its beneficial consequences for the outcome of labor, including a reduced need for medical interventions, has been researched extensively by Klaus and colleagues. (21-22). As the indiscriminate utilization of technology and routine medical interventions have taken over the process of labor and delivery, it becomes necessary that we embark on a critical revision of these processes, that we eliminate the unnecessary and harmful, that we set correct parameters for the use of technology, and that we give back to the mother, her baby and her family, their principal role in the reproductive process.

The induction of labor. The history of humankind's attempts to induce labor is a preferred topic for students of the history of medicine and of reproduction in general. The modern era of labor induction, however, began in the mid-twentieth century, when oxytocin was separated from other components of pituitary gland extracts and the production, soon thereafter, of the first synthetic oxytocin (17).

Today "elective" induction has propagated throughout the planet. Labor induction rates in 1992, as reported by the WHO, reached as high as 80% in Greece (17). In the United States 19.2% of labors were induced in 1998 (23). Puerto Rico, on the other hand, reported a labor induction

rate of only 6.6% in 1997 (16). Some studies have suggested, however, that labor inductions in some countries are underreported in the birth certificates, for which reason adequate information on the real rates should be gathered directly from the medical records (24-25).

The first warnings related to the risks associated to labor induction began to appear in the late 1970s (26). Reports were published, among other things, on the increased risk of neonatal hyperbilirubinemia after induced labor (27). Although the conceptualization of the significance of neonatal hyperbilirubinemia has been revised in recent years, the presence of this condition is a frequent cause, albeit incorrect, of a recommendation for weaning the baby by many pediatricians (28-29).

The artificial induction of labor is a medical intervention which frequently provokes contractions of such a magnitude that require the need of narcotic analgesia in the mother, with its subsequent sedative effect on the neonate. This situation frequently hinders latch-on and effective breastfeeding in the first hour after birth, as recommended (30). The medicalization inherent to the process of induction of labor, moreover, can produce levels of stress in the mother that may delay lactogenesis (31). Labor induction, especially in nulliparas and in the presence of a non-inducible cervix, increases the risk of cesarean section (32). We will elaborate further on the effect of cesarean section on the initiation and maintenance of breastfeeding.

One of the valid indications for the use of the electronic fetal monitor is the induction of labor (33). As we shall see further on, the use of the fetal monitor as such can interfere with breastfeeding as its limits mobility of the mother, condemns her to the supine position, prolongs the duration of labor, interferes with its physiologic progress, and increases the risk of a cesarean section.

Elective induction of labor can also provoke iatrogenic prematurity due to the incorrect determination of gestational age by the physician. A recent report adds that even for babies born at 37-38 weeks the risk of surfactant deficiency that requires respiratory therapy is 120 times greater than for babies born beyond 39 completed weeks (34). These babies, of course, require intensive care and their condition frequently precludes the initiation and maintenance of successful breastfeeding.

For all the reasons heretofore presented the Consensus Meeting on the Technology of Birth in Fortaleza, Brazil, under the auspices of the WHO, recommended that labor not be induced for convenience and that no health region in the world should have labor induction rates over 10% (17).

Maternal position for labor and delivery. Up until 200 years ago the preferred maternal positions for labor

and delivery were vertical, and this is still so in traditional cultures. The adoption of the supine position was never based on scientific evidence. It was rather the historical consequence of the conflict between the European midwives and the obstetrician/surgeons who were emerging as a new medical specialty and who preferred the lithotomy position for their surgical procedures (35).

The negative effect of the supine position for delivery has been known for years (36-37). The risks of supine hypotension are manifested by placental insufficiency with negative consequences for the baby (38). Many researchers have reported that the woman who is offered an option prefers alternate positions, such as sitting, standing or walking for her labor (17,39). These reports also showed that the free selection of the position for labor produces an analgesic effect, thus reducing the need for narcotics during labor. Other studies have shown that vertical positions improve the efficiency of the uterine contractions, shorten the duration of labor, and improve the status of the neonate (17).

The supine position affects breastfeeding because it increases the need for analgesia, prolongs the duration of labor, increases maternal tiredness, and increases the risk of fetal heart alterations which force the performance of a cesarean section or an operative delivery (40-43).

The use of pharmacological analgesia/anesthesia. The risk of adverse effects produced by pharmacological analgesia used in labor has been known for years and should motivate us to explore alternatives (17). Retardation and depression of the sucking reflex in the baby has been noted (41). The use of narcotics inhibits the capacity of the baby to recognize the maternal breast and his (her) latch-on in the majority of cases (30).

The use of regional anesthesia, on the other hand, has reached alarming proportions in the United States, where it is used in 80% of all deliveries (44). In such cases, there is an increased risk of maternal fever, an increase in the incidence of Apgar <7 in the neonate, a larger incidence of neonatal hypotonia, and an increased need of oxygen therapy and resuscitation efforts (45). The increased incidence of maternal fever raises the question of a possible infectious etiology due to the prolongation of labor produced by the epidural anesthesia (44). Independently of the etiology of the fever, nevertheless, it is unquestionable that it promotes the separation of mother and baby due to the intensive care, intravenous antibiotics etc. to which it submits the newborn. This situation affects maternal-infant bonding and the initiation of successful breastfeeding.

The routine use of the electronic fetal monitor. In 1997, 78% of all deliveries in Puerto Rico were managed with the use of the electronic fetal monitor (16). For over

a decade, however, we have known that electronic monitoring is not superior to clinical monitoring of the baby in utero through the periodic auscultation of the fetal heart during labor. Since 1990 results were published of 8 randomized clinical trials which showed that the electronic monitor does not reduce perinatal mortality (17,46). The rates of cerebral palsy, on the other hand, have not been reduced after 30 years of electronic monitoring (17).

The American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP) have recommended that auscultation of the fetal heart rate during labor be carried out, in low-risk cases, every 30 minutes during the first stage and every 15 minutes during the second stage of labor. In high-risk cases this should be done every 15 minutes and every 5 minutes respectively during the first and second stages of labor. With this protocol there is no difference in the status of the newborns when compared with babies born with the use of electronic fetal monitoring (47).

The indiscriminate use of the electronic fetal monitor can have a negative impact on breastfeeding. It increases the number of cesarean sections as well as that of operative deliveries (46). Electronic monitoring restricts the mother's mobility during labor and keeps her in bed, usually in the supine position, if telemetry facilities are not available. This prolongs labor and increases the pain of the labor contractions, increases the need for pharmacological analgesia/anesthesia and produces a mother who is more tired and exhausted. The effects of all these factors on breastfeeding have already been discussed.

The indiscriminate use of the episiotomy. The episiotomy is the most common surgical procedure performed for the management of labor and delivery in many countries. The reported world experience is very variable, with extremes like Hungary where it is practiced in 100% of the deliveries, and Holland, where it is used in only 8% of them (48). The true incidence of the practice of episiotomy in Puerto Rico is unknown since it is not reported in the birth certificate as part of the obstetric procedures carried out in the management of the delivery.

The purpose that is alleged to justify the massive utilization of the episiotomy is to prevent perineal tears during the birth of the baby and the long-term consequences of pelvic relaxation. Several reports, however, have demonstrated that episiotomy fails to keep its promise of reducing damage to the perineum and, instead, contributes to that damage (49-51). Another study, recently reported from Boston after evaluating 1,576 deliveries, shows that the type of obstetrical provider, and not the conditions of the delivery, is the

principal determining factor in whether an episiotomy is done or not. In this study, private physicians performed an episiotomy in 55% of the deliveries, as opposed to 33% of physicians in academic centers and 21% of the midwives (52).

Confronted with the lack of scientific evidence to justify the routine use of episiotomy and the abundant amount of evidence to the contrary, the WHO has discussed the issue and has concluded that there is no justification for the systematic use of the episiotomy (17). The textbook Williams' Obstetrics, on the other hand, quotes Ledé's work and recommends that the episiotomy not be practiced routinely (33). The episiotomy increases the amount of pain in the postpartum period, limits the mother's capacity for ambulation and has a negative effect on her self-esteem and her sexuality (49,51). These factors can affect the initiation and duration of breastfeeding.

Separation of the mother from her baby. The unfortunate practice of separating the mother from her baby immediately after delivery increased in our country and in several others, as part of the medical model for reproduction, with the development of the newborn nurseries. These, in turn, were justified as a strategy to control neonatal infections, which increased precisely due to the progressive abandonment of breastfeeding. A study carried out at the Maternal and Child Health Program of the Graduate School of Public Health found that only 33% of private hospitals in metropolitan San Juan, and none of the public hospitals, allowed mothers to breastfeed in the first hour postpartum. Only 22% of the private hospitals, and none of the public hospitals, allowed 24-hour rooming-in. All the hospitals studied gave glucose and artificial milk to newborns routinely (53). Fortunately, and thanks to the efforts of mothers and some health care professionals and their organizations, these practices are showing signs of change. The capacitation of close to 200 health professionals, many of them hospital-based, as certified lactation educators by the Maternal and Child Health Program of the Graduate School of Public Health during the last two years, begins to show results and several hospitals have understood the necessity of modifying their harmful practices towards breastfeeding (54). The road is still, nevertheless, very much uphill in the majority of hospitals for mothers who do not wish to be separated from their babies.

The separation of mothers and babies after birth obstructs the initiation of breastfeeding during the first hour following birth, as recommended by several authors and by the American Academy of Pediatrics (2, 30). It allows for the administration of artificial milk and glucose in water to the baby, against recommendations (2, 55-56). It prevents breastfeeding on demand, as

recommended (2,57) and promotes, furthermore, the use of nipples and pacifiers on the neonate, against present recommendations (58-60).

Cesarean section. Deliveries by cesarean section constitute a serious public health problem in Puerto Rico. Since the late eighties, the cesarean section rate in our country had reached 30% (16). By way of comparison, we should mention that in 1988 the cesarean section rate was 19.1% in the United States, 14.4% in the United Kingdom, 7.2% in Holland, 14.1% in Finland, 12.1% in Denmark and 16.1% in Australia (17). All these countries had, and still have, reproductive health indices that are superior to Puerto Rico's.

The cesarean section problem in Puerto Rico has worsened in the last years of the twentieth century. By 1997, 33.4% of the babies born in our country were born by cesarean section (16). By 1998 cesarean delivery had increased to 35.1% of all deliveries and by 1999 the rate climbed to 37.8% (61). These increases have occurred in spite of the Year 2000 Health Objectives for the United States, which expected to reduce the cesarean section rate to 15% of all deliveries. There, the reported cesarean section rate was 20.8% in 1998 and 21.2% in 1999 (23). Although the United States also failed to achieve this national health objective for the year 2000, their deficit was obviously far smaller.

The possible reasons for our incapacity so far to improve our alarming cesarean section rates are complex and will be the motive of another publication. Suffice it to say for now that, in the component of repeat cesarean sections, only 8.7% of our candidates for a vaginal delivery after a previous delivery by cesarean section, actually achieved a natural birth (16). According to ACOG, between 60-80% of these patients could have a vaginal delivery, after the adequate screening to sort out non-candidates (63).

The negative effects of cesarean section over breastfeeding, its initiation, type and duration are multiple. Hospital barriers to breastfeeding multiply for the cesarean section mother. She has been turned into a major surgery patient. The surgical intervention increases her pain in the postpartum period and reduces her mobility. Multiple medications are used, especially analgesics and antibiotics. Although the use of these medications is not a contraindication for breastfeeding, they do turn into barriers due to the incorrect information which physicians and nurses give to these mothers. The lack of adequate training on the part of these professionals on the use of drugs in the breastfeeding mother often leads them to recommend weaning and artificial feedings to the mothers receiving these drugs.

Hospital stay is prolonged for the cesarean section mother as compared to the mother who delivers naturally.

In hospitals without rooming-in policies this prolongs the separation of mother and infant. This scenario promotes greater maternal frustration and lowers her self-esteem (64).

Recommendations

The previously described picture is not exclusive to Puerto Rico. It is frequently reproduced in many western countries that have adopted the medical model as the paradigm for the care of labor and delivery. As a response to this situation, a large group of individuals and organizations at the international level founded, in 1996, the Coalition for the Improvement of Maternity Services (CIMS) (18). The mission of this group is to promote a new model of care for the mother and her baby that will improve the outcomes of childbirth, while reducing its costs. This model focuses on prevention and in wellness as an alternative to the prevalent model of many of our countries, which emphasizes on high technology and its subsequent low cost-effectiveness to society. The first consensus initiative carried out by the Coalition was the

transcend the present model and move towards modern alternatives that return to the mother and her family the principal role they lost. A new model, with a mother who has been empowered to take on the responsibility for her reproductive process, will bring forth a new relationship with her reproductive health care provider, one of collaboration, respect and mutual understanding. Future generations deserve no less.

Resumen

Las principales organizaciones que agrupan a los proveedores de atención obstétrica y pediátrica en los Estados Unidos y Puerto Rico se han pronunciado formalmente a favor de la lactancia y el amamantamiento. Las prácticas rutinarias de atención al parto, sin embargo, son a menudo barreras para el inicio, tipo y duración de la lactancia. Muchas de ellas, además, carecen de base científica que justifiquen su utilización indiscriminada. En este trabajo analizamos algunas de las prácticas obstétricas y su impacto en la lactancia materna y el amamantamiento.

Table 1. Summary of the Ten Steps of the Mother-Friendly Childbirth Initiative

1. Unrestricted access to the persons the mother wishes to accompany her, including the father of the baby, his (her) brothers and sisters, and other members of the social environment. Includes also the doula.
 2. Information to the community about practices and procedures in the area hospitals, including statistics on interventions and results.
 3. Respect for the beliefs and values of the mother and her family.
 4. Unrestricted movement and positions for labor and delivery, unless there are medically valid reasons for restrictions, and non-utilization of the lithotomy position for delivery.
 5. Clearly defined policies on interaction with and referrals to other community resources that offer mother-friendly birth care and post partum care including, but not limited to, breastfeeding support groups.
 6. Discontinuance of routine practices devoid of scientific basis, including but not limited to the following: shaving, enema, intravenous fluids, oral feedings deprivation, early rupture of the membranes and electronic fetal monitoring. Efforts must be made to achieve: induction rates < 10%, episiotomies < 20%, cesarean section rates no greater than 15%, VBAC rates > 60%.
 7. Stimulation of strategies for non-pharmacological pain relief.
 8. Stimulation of bonding and physical contact with the newborn baby, including those who are premature or sick.
 9. Discouragement of routine circumcision.
 10. Implantation of the 10 steps for successful breastfeeding of the Baby Friendly Hospital Initiative.
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Mother-Friendly Childbirth Initiative, whose ten steps we offer as an alternative to the present situation. The actual model has proved to be inefficacious and expensive, and has denied the mother and her family the prominent role they deserve in reproduction (Table 1) (18).

It is necessary for government, professional organizations, community groups and feminist movements to tackle this situation and the scenario where women need to give birth to their children. In these times of health care reform, having left the twentieth century behind, health services to the mother in labor must

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