

# Hydrotherapy Found to Ease Labor Pain, Anxiety

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Contributing Writer

BETHESDA, MD. — A small study of hydrotherapy in labor has documented a significant decrease in anxiety, a fall in stress hormones and unexpectedly, a fall in oxytocin levels and a decrease in uterine contraction frequency, Rebecca Benfield, Ph.D., reported at a meeting sponsored by the National Institutes of Health's Pain Consortium.

Dr. Benfield, a certified nurse-midwife, has long seen benefit in bathing during labor: Women enjoy it and feel better as their pain and anxiety are decreased.

She and others have not known, however, exactly what lies behind the maternal response to hydrotherapy—the psychophysiological mechanisms of action, for instance, and the possible effects on uterine contractility.

The recently completed study was the first, she said, in which plasma stress hormones

**Fetal heart rate and uterine contractions were monitored, and visual analog scales for anxiety and pain were administered before each blood draw.**

were measured during immersion. The findings suggest that the therapy warrants attention in a randomized controlled trial and further investigation as an intervention for labor dysfunction, reported Dr. Benfield, associate profes-

sor of nursing and clinical assistant professor of obstetrics and gynecology at East Carolina University in Greenville, N.C.

Eleven healthy women in spontaneous active labor (cervical dilatation of 3-6 cm) at term were immersed to the xiphoid in 37° C water for 1 hour.

Blood samples were drawn before immersion and repeated at 15 and 45 minutes of hydrotherapy. Fetal heart rate and uterine contractions were monitored, and visual analog scales for anxiety and pain were administered before each blood draw. No analgesia was administered during the study.

Mean anxiety scores decreased from 51 mm (on a scale of 100 mm) to 33 mm at 15 minutes and 29 mm at 45 minutes. Pain also decreased, with the changes more significant in women with higher baseline pain scores vs. those with lower baseline pain scores, Dr. Benfield and her associates at East Carolina University reported in a poster presentation.

Statistically significant decreases in vasopressin (from a mean of 5.1 pg/mL at baseline to 4 pg/mL at both 15 and 45 minutes), oxytocin (from approximately 193 pg/mL at baseline to 153 pg/mL at 15 minutes and 154 pg/mL at 30 minutes), and cortisol were among the other changes.

Cortisol decreased twice as much after 15 minutes for the high baseline pain group (a mean decrease of 6.2 mcg/dL), compared with the low baseline pain group (a mean decrease of 3.1 mcg/dL).

The level of beta-endorphins increased significantly, but surprisingly, levels of epinephrine and norepinephrine did not change significantly, Dr. Benfield reported.

All women had a positive plasma volume shift (+4.1% at 15 minutes and at 45 minutes) that was positively correlated with contraction duration, while contraction frequency decreased significantly.

Contraction intensity was not measured, she said in an interview, and is therefore “a missing piece” in the under-

standing of hydrotherapy's effect on labor contractility.

Hydrotherapy “probably, however, will pan out to be a potentially good intervention for women with high levels of pain and those who are having some type of dysfunctional [labor] pattern ... because theoretically it should provide better perfusion to the uterus,” Dr. Benfield said.

Thus far, she said, it appears that the “immersion effect—the hydrostatic pressure of the water—is what's driving the

physiologic changes,” she said.

The results may also demonstrate two physiologic roles of oxytocin: its traditional role in uterine contractility and a novel role as an antistress hormone, according to Dr. Edward R. Newton, a coinvestigator for the study.

Although the study's sample size is too small to draw any conclusions about labor outcomes, no maternal or neonatal infections were attributed to the bathing, the researchers said. ■



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