

Opinion paper

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One of the most important developments of modern obstetrics has been the humanization of the labor and delivery process. This includes a family-centered approach, a liberal visitation policy, attention to appropriate pain management, and the central role or respect for patient autonomy [6]. In these efforts it is essential that the safety of the fetal and neonatal patient must not be neglected.

Proponents of underwater births give many reasons for advantages of water labor and birth including that buoyancy in water helps women to relax and that the warmth of the water may help to reduce pain. Waterbirth is being promoted as leading to fewer injuries to the birth canal and enhancing maternal autonomy [9].

While supporters of waterbirth espouse certain benefits to the mother, there are no proven benefits to the newborn [5]. To the contrary, there is sufficient evidence that delivery in water can cause serious adverse outcomes to the neonate including death. There are numerous case reports of neonatal deaths, pneumonia, hyponatremic seizures, infections, and multiple drownings attributed to underwater births [8, 10]. In their report of four infants with water aspiration Nguyen et al. provide further evidence that waterbirth causes adverse outcomes to the newborn [7]. A recent study looking at women with labor dystocia in the first stage who were randomized to water versus non-water/

augmentation of labor showed that significantly more babies born to the water-labor group were admitted to the neonatal unit when compared with those in the augmentation group (6/49 in the water group were admitted to the NICU versus 0/50 in the augmentation group;  $p=0.013$ ) [2]. Bowden et al. have stated: “we are convinced there is no evidence to support any benefit of underwater birth for the neonate, and plenty of evidence to suggest harm.

With the potential for drowning, hyponatremic seizure activity, infection, and pneumonia, is it ethical to call for randomized, controlled trials?” [2].

In this issue of the *Journal of Perinatal Medicine*, Geisbuehler et al. reviewed outcomes of “waterbirths” and “landbirths” [3]. The authors acknowledged that the observational nature of their study is a weakness. Nevertheless, even an observational study with over 9,000 births over a 9-year period could be clinically relevant. In this study there were originally 4,399 intended waterbirths (“waterlabor patients”), and 782 of these were “planned but discontinued” waterbirths (“failed waterlabor”).

This left 3,617 women who went on to have a waterbirth. Reasons for discontinuing waterlabor included suspicious/pathological FHR, failure to progress, wish of the parturient, “surgical intervention”, and “other”.

These 782 “failed waterlabor” patients were, by definition, a high risk group, but were added to the landlabor and eventual landbirth group. There is no mention at which point of labor they were moved over to the landbirth group.

It is possible that some of those women laboring in water were pulled out of the water at the last moment, shortly before delivery because sudden complications were seen. They then were included in the landbirth group when they should have been part of the waterlabor and birth group. The authors fail to report separate outcomes for the failed waterlabor group, masking potentially adverse waterlabor and birth outcomes.

In Table 1 (Characteristics) the authors mention that 86 patients in the waterbirth group (2.4%) had an abnormal tracing. But in Table 9

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there are 326 patients who were moved out of the water with abnormal tracings. The authors added the 326 failed waterlaboring patients with abnormal tracings in the landbirth group, when they did have the abnormal tracings while they were laboring in water. Thus, 412 (and not 86) patients in the waterlabor group had an abnormal tracing (or nearly 5-times the patients mentioned in the waterbirth group). Other concerns with this study also include that adverse outcomes such as low Apgar scores and shoulder dystocias should have been better identified as to which group they came from and how many patients with “failed waterlabor” had meconium or infections. For this observational study to be clinically relevant all “waterlabor” patients should have been included in an “intended to waterdeliver” group, not only those with decidedly good outcomes who eventually delivered in water.

The authors conclude that “This comparison shows that waterbirths are, vis-a-vis risks for mother and child, and acceptable birthing alternative to landbirth”. We believe that the authors of this study have not convincingly made this point. In the absence of proof of documented safety to the fetus and newborn baby we cannot support attempted labor and birth in water as a reasonable clinical option. We believe that acquiescence to a woman’s request in this matter is ethically problematic because respect for autonomy is not an absolute ethical principle but it needs to be balanced against beneficence- based concerns about fetal and neonatal safety [4].

## References

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