

# Terbutaline, or not Terbutaline? That is the question...

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Premature labor is a complication dreaded by both caregiver and by parent alike. Parents, faced with the threat of pregnancy loss, are understandably desperate to save the life of their child. Caring practitioners obviously don't want to see the parent endure the painful process of loss either, but in a litigious society such as our own, we must also recognize the imperative to give the appearance that every attempt has been made to avoid such loss, even if the futility of such an attempt is well known by the medical professional.

Modern medicine has tried very hard to reduce the number of premature deliveries, but sadly, very few of the current standard practices are able to stop a true premature birth. The incidence of premature delivery, before 37 weeks gestation, has *increased* by 11% since 1990.<sup>1</sup>

Does this increase suggest that mothers are becoming less healthy, despite numerous campaigns to improve the health of mothers and babies? While that may seem to be the case at first glance, it may not actually be so. There are other causes to prematurity that are often ignored, including preventable prematurity due to the high number of

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<sup>1</sup> *National Vital Statistics Reports, National Center for Health Statistics, April 17, 2001.*

unnecessary cesareans in the US<sup>2</sup> as well as a high number of cases of premature labor being diagnosed and treated where it actually does not exist.

Certain obstetrical complications tend to fall into and out of favor. Premature labor is currently 'in vogue'. Of course, it *does* really exist in a small number of pregnancies. 97.3 babies per 1000 are actually born too early. However, alarmingly, many women are being diagnosed and 'treated' with drugs and protocol that aren't even effective for the *true* condition of prematurity, much less where it does not exist.

Most often the faulty diagnoses of pre-mature labor examined here is made via unnecessary routine vaginal exams and superfluous electronic fetal monitoring devices in the doctor's office. Mom is not told that neither has been shown to improve outcomes for either mother or baby and neither provides useful information<sup>3 4</sup>. Never mind that the definition of pre-term labor includes contractions that get longer, stronger and closer together while opening the cervix. Is it reasonable to assume that this kind of progression could be determined by one routine internal digital exam and EFM per month, even per week? Not really, much closer observation would be required. Nevertheless, Mom is so alarmed at the possibility of losing her baby that she often isn't thinking critically. She's

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<sup>2</sup> The World Healthy Organization postulates that a 10% to 15% cesarean rate optimizes lives saved...meaning that at the current rate of 24%, about half of the cesareans are at best unnecessary, and at worst, start claiming lives the cesarean is meant to save as an emergency procedure.

<sup>3</sup> Lenihan JP. Relationship of antepartum pelvic examinations to premature rupture of the membranes. *Obstet Gynecol* 1984;63(1):33-37

<sup>4</sup> McDuffie RS et al. Effect of routine weekly cervical examinations at term on premature rupture of the membranes; a randomized controlled trial. *Obstet Gynecol* 1992;79(2):219-222.

willing to do anything to save her baby. She also probably doesn't know that even if she is dilated a couple of centimeters, it can be completely normal.

So, mom is either sewn up (cerclage) or given terbutaline and put on bed rest. She's so grateful that her doctor 'caught' this, of course, yet there is more she doesn't know. She doesn't know that in study after study, terbutaline doesn't do a thing to stop premature labor. She also doesn't know that this drug isn't approved by the FDA for pregnancy, labor, delivery or lactation or that the FDA warns that it should not be used to stop or slow contractions because "Serious adverse reactions may occur after administration of terbutaline sulfate to women in labor."<sup>5 6 7 8 9 10</sup> The pregnancy continues (because it would have anyhow) but there is no way to prove that it wouldn't have, so the assumption is that the only reason it did was because of the efforts of the doctor.

Any woman who has been put on this drug will recognize these effects. Nausea, vomiting, heart palpitations, increased heart rate, shaking, chest discomfort, shortness of

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<sup>5</sup>D.M. Main, E.K. Main. "Management of Preterm Labor and Deliver." *Obstetrics: Normal and Problem Pregnancies*. In. S.G. Grabbe, J.R. Hiebyl, J. L. Simpson, editors. New York: Churchill Livingstone, 1986, p. 689.

<sup>6</sup>M. J.N.C.Deirse. "Bet-Mimetic Drugs in the Prophylaxis of Preterm Labour: Extent and Rationale of Their Use." *British Journal of Obstetrics and Gynecology*. 91 (1984)4 31.

<sup>7</sup>G.A. Macones, M. Berlin, J.A. Berlin. "Efficacy of Oral Beta-Agonist Maintenance Therapy in Preterm Labor: A Meta-Analysis. *Obstetrics and Gynecology*. 85(1001)313.

<sup>8</sup>K.D. Wenstrom, C.P. Wener, D. Merrill, J. Neibyl. "A Placebo-Controlled, RANdomized Trial of the Terbutaline Pump for Prevention of PReterm Delivery." *American Journal of Perinatology*. 14(1997)87.

<sup>9</sup> D.A. Guinn, A. R. Goepfert, J. Own, K. D. Wenstrom, J.C. Hauth. "Terbutaline Pump Maintenance Therapy for Prevention of Preterm Delivery: A Double-Blind Trial." *American Journal of Obstetrics and Gynecology*. 179(1998)874.

<sup>10</sup> American College of Obstetricians and Gynecologists. "PReterm Laobr." *ACOG Technical Bulletin*. 206(1995).

breath, high blood pressure and the inability to sleep. This drug can also cause liver damage.

Because the betamimetic agent definitely cross the placenta, baby experiences the same thing that mom is, including heart rate accelerations<sup>11</sup>. If the mom is unable to eat from the nausea, the combination of not being able to keep anything down, the effect on her already taxed liver, and the high blood pressure, she will quite likely develop symptoms of pre-eclampsia, a life-threatening disorder, that in this particular case was not only completely preventable but iatrogenic (doctor caused).

Now she needs to be 'saved'. She will be induced. If she really *had* been experiencing premature labor this would be easy, since she was on her way already, right? Except that in this case, she wasn't *in* premature labor. The induction doesn't work on this hard, high, closed cervix. Since many inductions start with a prostaglandin ripening agent, rupture of the membranes and pitocin or mistopril (an ulcer drug, again, not only *not* approved by the FDA for this use, but known to cause a number of complications) the mom is on a clock. If she doesn't deliver in 24 hours, she will be sectioned. Of course, because her water has been broken and fingers have been inside her constantly since she arrived, there is a high probability that she will get a hospital acquired infection and the cesarean may be warranted. Although, preventable and nosocomial (hospital caused). This woman will get an unnecessary cesarean and be eternally grateful that her doctor 'saved' her, completely unaware that all of it was avoidable.

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<sup>11</sup> *A Guide to Effective Care in Pregnancy & Childbirth*, Second Edition, Murray Enkin, Marc J.N. C. Keirse, Mary Renfrew, and James Neilson. 1995, p. 166.

Remember that premature labor *is* an actual medical condition. So how does a mother know if she really has it and does need medical assistance or if something else is going on? How is real premature labor diagnosed? What causes it? How can a mother reduce her chances of going into labor too soon, and if it does happen to her, what are the *effective* treatments? What treatments, besides terbutaline have been shown to be *ineffective*, and what are their risks?

Twenty-five percent of preterm, low birth weight cases occur without any known risk factors<sup>12</sup>. Prediction of this sector is nearly impossible. When it occurs, blame must not be placed at the feet of the practitioner who is treading a very fine line between prudent use of technology that could save a life, and inappropriate use of technology in the name of ‘defensive medicine’ that could cost lives.

Prevention is the best medicine when it comes to lowering the rate of prematurity.

Nearly 75% of premature labor could be avoided if mothers took more responsibility for improving their health by quitting smoking, not using alcohol, eating better and preventing urinary tract infections. Sometimes this is not made very clear, as caregivers face being labeled ‘judgmental’ for trying to encourage mothers to stop smoking or for pointing out that negative behavior choices could have life-long ramifications.

Unfortunately, those that cave into ‘political correctness’ around the issues may then be sued when a baby is premature because honesty and sparing the parents the emotional

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<sup>12</sup> *Obstetric Care Providers’ Knowledge and Practice Behaviors Concerning Periodontal Health and Preterm Low Birth Weight.*

and financial hardships (conservatively projected at \$500,000 for the life of the child) of raising a baby born prematurely might have made a mother 'feel guilty', which could have lost them a client.

Mothers need to be properly nourished for placental health. Mothers have complete control over what they put in their bodies. A baby who is not getting the essential requirements for optimal growth and well-being is more likely to be born prematurely. In the same vein, smoking damages the placenta in a number of ways. Because 50% of what should be oxygen going to the placenta and baby is carbon monoxide, cyanide, arsenic, nicotine and countless other toxins, the placenta grows over more of the surface of the placenta seeking oxygen. Small dead areas called "infarcs" are more common in smokers. Areas that cannot deliver nutrients and oxygen to the baby...which is why smokers' babies are smaller than normal babies and prematurity is more common in smokers.

Nutrition is also vitally important for the health of mom. Dr. Tom Brewer has done extensive work on the effect of nutrition on pre-eclampsia.

Infections are another cause of pre-mature labor. Routine vaginal exams in pregnancy serve no purpose. It has been theorized that excessive use of this pointless ritual contributes to premature labor and premature rupture of the membranes by introducing germs to the cervix on the examiners glove. Even sterile technique isn't truly sterile. In any case, a pelvic exam without medical indication tells the caregiver nothing. A woman can be dilated to 2 centimeters at 34 weeks and still be pregnant past her 'due date'.

Likewise, a woman can be 'high, firm and closed' and have a three-hour labor at 38 weeks.

Dehydration often causes premature contractions. Mothers must take in at least ten 8-ounce glasses of water a day, not including other liquids in the equation. In hot weather she needs more. Insufficient water intake is also a factor in bladder infections in pregnancy, which can cause pre-term labor.

Multiples are often expected to be premature in the medical model, but is that expectation a given? No. Midwives attending well-nourished mothers of multiples often not only have moms who reach their 'due date', but go 'over due' to deliver healthy babies of normal weight. With twins, it may very well be the expectation of the caregiver (thus, the management of the pregnancy) that is the biggest factor in early delivery of twins, excluding the rare medical abnormality.

Avoidance of all non-medically indicated prenatal testing reduces the chance of being misdiagnosed or over-diagnosed. A subject which Henci Goer has extensively explored and documented in *Obstetric Myths verses Research Realities*.

Establishing communication with your caregiver about the medical applicability, risks and benefits to any-and-all interventions not just in pregnancy, but through the birth, is vitally important. Any doctor who is practicing evidence based care will welcome this exchange and be pleased that you would like to take more responsibility in your care. A

doctor who becomes angry that you would like more information, defensive that you would require evidence of efficacy or condescending toward your efforts to be knowledgeable is waving a big ol' red flag. Remember the words of Maya Angelou "When people show you who they are, believe them."

What's a parent to do if, by some fluke of nature or circumstance, premature labor *has* become their reality?<sup>13</sup>

*Interventions that have been shown to be of questionable or no value:*

- Home uterine activity monitoring
- Bed rest
- Repeated vaginal exams
- Ultrasound assessment of cervical length

*Interventions that have been shown to be of questionable or no value **and** which may pose significant risk:*

- Terbutaline
- Magnesium Sulphate (although this *has* been shown to arrest uterine contractions in women who are not actually in preterm labor...exactly the situation this article was written about...but with serious side effects)
- Cervical cerclage<sup>14</sup>

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<sup>13</sup> *A Guide to Effective Care in Pregnancy & Childbirth*, Second Edition, Murray Enkin, Marc J.N. C. Keirse, Mary Renfrew, and James Neilson. 1995, p.161-171

*Interventions that may help but not without significant risk:*

- Prostaglandin inhibitors
- Ritodrine

*Interventions that seem to help without significant risk and warrant further investigation:*

- Calcium supplementation
- Progestogens
- Antimicrobial agents (antibiotics)

*Interventions with insufficient data to warrant regular use:*

- Diazoxide
- Oxytocin antagonists

*Significantly effective with no risk:*

- Hypnosis<sup>15</sup>

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<sup>14</sup> *Multicentred controlled trial of cervical cerclage in women at moderate risk of preterm delivery*, Lazar P, Gueguen S, Dreyfus J, et al; *British Journal of Obstetrics & Gynaecology*. 91(8): 731-735, 1984. **Abstract:** A total of 506 women at moderate risk of preterm delivery were randomly allocated to either cervical cerclage or a control group. Significantly more women in the group allocated to cerclage were admitted to hospital for reasons other than the operation and more received oral tocolytic drugs. There were also more caesarean sections and more preterm deliveries in the women allocated to cerclage although the differences between the two groups were small and not statistically significant.

<sup>15</sup> *Medical Hypnosis in Preterm Labour, A Randomized Clinical Trial*. Report of two Pilot Projects. Dr. Donald C. Brown, Dr. Mary Murphy, June 1996. In these studies, pregnancy was prolonged in 70.1% of subjects using hypnosis as opposed to 19.9% of the control subjects.

What is the very best way to avoid being treated for a condition that doesn't exist? See a midwife or holistic general practitioner in pregnancy instead of surgical specialist like an obstetrician. If an underlying medical condition dictates that you must see an expert in pathology (illness), such as an OB/GYN, initiate dialog early about appropriate birth technology specific to your situation. Learn about what you can do to be healthier and how you can best assist your caregiver in your treatment. Don't be afraid to get second opinions or change caregivers if yours is not treating you respectfully and helping you to learn about your condition. We teach people how to treat us. If you don't speak up now, you create your own experience.

For more information:

*Obstetric Myths vs. Research Realities: A Guide to the Medical Literature*, Henci Goer.

*Karen's Preterm Labor Drugs Web Site*, [www.geocities.com/HotSprings/Villa/3604/](http://www.geocities.com/HotSprings/Villa/3604/)

*National Woman's Health Alliance Site*, [www.nwhalliance.org/obstetric\\_drugs.htm](http://www.nwhalliance.org/obstetric_drugs.htm)