

Preventing Preterm Labor in Albania

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ABSTRACT

The purpose of this study was to prevent preterm labor that uses maintenance with tocolysis therapy. This paper emphasizes the fact that there are very few hospital protocols of preterm labor that use maintenance tocolysis therapy. Our goal is to identify the possible benefits of such therapy based on individual selection of pregnant women and their gestational age. We bring our university hospital experience study of three years with a long term use of tocolysis at risk pregnancy unit at the “Koço Gliozheni” University Hospital of Obstetrics and Gynecology, Tirana, Albania. Qualitative method is used in this study and the prospective controlled population based study during March 2011 to March 2013 included pregnant women hospitalized for preterm labor with the criteria of: singleton pregnancy, 28-32 weeks of gestation, with no PPRM; maintenance with tocolysis therapy over one month period. Women were divided in two groups: 28-30 weeks gestation age and 30-32 weeks gestation age; tocolytics used: indomethacine, ritrodine, nifedipine, magnesium sulfate. Data collected showed that 325 pregnant women with admission diagnosis of preterm labor which met the study criteria went under the maintenance with tocolysis therapy, 200 patients or 61.5 % with gestation age 20-30 weeks, and 125 patients or 38.5 % were 30-32 weeks of gestations. There was a significant difference in patient group of 28-30 weeks gestation age by prolonging their pregnancy more than the group of 30-32 weeks gestation age. The prolongation of pregnancy was 45 days with the use of tocolysis therapy and these patients had a major benefit compared to those that used just emergency tocolysis therapy. The study draws to the conclusion that the use of maintenance with tocolysis therapy where there is no urgency indication for any intervention to interrupt the stay of the baby in uterus, gives considerable benefits to preterm labor diagnosed women of their singleton pregnancies and prolongs pregnancy substantially. However, use of larger population study and more studies need to be done in order to offer suitable guidelines to prevent preterm labor.

Keywords: gestation, preterm labor, prevent, tocolysis therapy.

Introduction

Delivery of the fetus less than 37 completed weeks of gestation is defined as preterm labor by World Health Organization; 1992 and hence this definition is used by almost all clinical protocols worldwide. So it is used by our medical institution. It is interesting to mention that recently this cut off is an ongoing debating topic among clinicians, as some of them advocate to bring the upper cut off to 39 weeks from last menstrual periods. This cut off is used today by almost all obstetrical and prenatal clinicians as the earliest time possible of planned elective cesarean section, as it is thought at this stage of pregnancy is caused less likely side effect to the baby's health. Regrettably, even today with the revolution of technology and the vast of funds that health care industry consumes we do not have concrete data on preterm labor incidence in global level. According to some developed countries statistics (Haas DM, 2006) we notice a striking climb of preterm rates over the past 2-3 decades. Based on the evidence shown from World Health Organization and The World Bank of the year 2011, it is observed that the rate of preterm birth in poor countries remains dramatic. This is mostly by their very low health expenditure per capita and little trained professionals and resources. The other reason of not having a solid data from poor countries as well as in many developing countries on preterm labor is because it is like a mission impossible to have complete medical records and health statistics. Challenge is faced on accurate data on preterm labor even in industrialized countries as well.

According to some developed countries health data the preterm labor rate varies from 6% to 13 % (Haas DM, 2006; Goldenberg RL at al., 2008). Prematurity of infants is a major determinant of neonatal mortality and morbidity and has short and long term consequences for health in general. Babies born prematurely have amplified rates of having respiratory illnesses, learning disabilities, and neurological deficits when comparing them with children born at term (Behrman RE at al., 2007; Ananth CV. at al., 2008). Moreover, morbidity that is associated with preterm birth frequently expands to afterward life, resulting in massive physical, psychological, educational and medical expenditure which in a way translates in costs (Petrou S., 2005). There are a number of causes that influence preterm labor. However, factors that cause preterm labor include medical condition of the mother or fetus, genetic, environmental exposure, infertility treatments, behavior and socioeconomic factors. The preterm birth according to the World health Organization (1992), is divided in three main categories:

- Extremely preterm which consists pregnancies less than 28 weeks gestation age
- Very preterm which consists pregnancies 28 to 32 weeks gestation age
- Mild preterm which consists pregnancies 32 to 37 weeks gestation age

Identification of signs and symptoms of preterm labor in time will help ensure that the patient can be assessed, diagnosed and treated appropriately. Our goal is to identify the possible benefits of maintenance with tocolysis therapy based on individual selection of pregnant women and their gestational age by weeks diagnosed with preterm labor. We bring our university hospital experience study of three years with a long term use of tocolysis at risk pregnancy unit at the "Koço Gliozheni" University Hospital of Obstetrics and Gynecology, Tirana, Albania.

Method

During March 2011 to March 2013 we were involved in this prospective controlled population based study at University Hospital of Obstetrics and Gynecology “Koco Gliozheni”, Tirana, Albania. Our main criteria for the subjects were: singleton pregnancy, gestation age of 28 to 32 weeks, and no preterm premature rupture of membranes (PPROM). Our sub-criteria in order to consider maintenance with tocolytic therapy is as below:

- One uterine contraction in 15 minutes
- Cervical dilation up to 2 cm
- Cervical effacement more or equal to 50%

Pregnant women diagnosed with preterm labor that met our criteria were informed about this prospective study and they agreed to be part of the study. A consent form was signed by each of them. This study population was admitted at our unit of risk pregnancy at our hospital with diagnose of preterm labor and with no high risk pregnancies. We divided this study population group into two groups in regards to gestation age by weeks:

- First group of pregnant women of 28-30 weeks gestation age and in this group there were involved 200 patients that met the criteria.
- Second group of pregnant women of 30 -32 weeks gestation age were involved 125 patients that met the criteria.

Tocolytics used were:

- Indomethacine, (used only 2 doses of 100 mg, not exceeding 48 hours)
- Ritrodine, (the dose depended on patient condition)
- Nifedipine, (we used 10 mg tid, and it was part of patient condition situation)
- Magnesium sulfate, (the dose depended on patient condition)

The therapy was used for over one month period and was either as single or combined therapy and it was a subject of fetal and maternal general wellbeing. We did apply corticosteroids to all our subjects once they were admitted at our medical institution in order to offer the best chance possible for fetal maturation.

Results

The collected data from 325 pregnant women that were admitted at our medical institution with the diagnosis of preterm labor showed that 61.5 % of them or the first group with 200 patients with gestational age of 28 to 30 weeks had considerable benefits of maintenance with tocolytic therapy by prolonging their pregnancy. It was noted that 120 out of 200 patients of this group or 60 % of this group, or 36.9 % of the whole group of 325 patients had a pregnancy prolongation of 8 more weeks. In addition, in this group we did observe that this was their first pregnancy. The other 60 patients of this first group or 30 % of them or 18.4 % of the whole study group had their pregnancy prolonged by 7 weeks. Furthermore, in this subgroup we noticed that 83.4 % of them, or 50 patients were on their second pregnancy with previous pregnancy delivered in term, and 16.6 % or 10

patients had either a missed abortion up to 8 weeks gestation age, or a previously desired medical induced abortion up to 11 weeks of gestation age. And the rest 20 patients of this first group, or 10 % of this first group, or 6.1 % of the main group had their pregnancy prolonged by 6 weeks. At this subgroup was noticed that 18 patients or 90 % of this subgroup of 20 patients of the first group, were on their second pregnancy and have had the previous pregnancy delivered at 35-37 weeks of gestation, and 2 patients or 10 % that were on their second pregnancy, had delivered their previous pregnancy at 34-35 weeks. See table 1.

Table 1. The group of 200 patients of 28-30 weeks of gestation age

Nr. of Patients	of Prolongation Pregnancy	Obstetrical History	Tocolytics use				Corticosteroids use
			Indomethacine	Ritrodine	Nifedipine	Magnesium sulfate	
120	8 weeks	G 1	+	+	+	+	+
60	7 weeks	G 2	+	+	+	+	+
(50)		G2P1A0					
(10)		G2P0A1					
20	6 weeks	G 2	+	+	+	+	+
(18)		G2P1A0					
(2)		G2P1A0					

Abbreviation: G = Gestation, P = Parity, A = Abortion. + indicates use of respective tocolytics

The data collected on the second group of 125 patients out of 325 patients in total, or 38.5 % of the study group population diagnosed with preterm labor when admitted at our medical institution they were from 30-32 weeks gestation age; the subgroup of 90 patients, or 72 % of the second group, had their pregnancy prolonged by use of maintenance with tocolytic therapy by 5 weeks. There was also perceived that 80 patients or 94.5 % of this subgroup were on their second pregnancy, and had their previous pregnancy delivered in term. The rest of 10 patients or 5.5 % of this subgroup, first pregnancy lost due to spontaneous abortion up to 16 weeks gestation age and the second pregnancy delivered after 37 weeks gestation age. The other subgroup of the second group consisted in number of 15 patients that with use of maintenance with tocolytic therapy had their pregnancy prolonged by 6 weeks. In this subgroup we did notice that they were on their second pregnancy with previous pregnancy delivered in term. The last subgroup of 20 patients of the second group did prolong their pregnancy with use of tocolytic therapy by 4 weeks. It was noticed that 10 patients or 50 % of them were on their third pregnancy having two previous spontaneous abortion and 10 patients or the other 50 % of them were on their second pregnancy with their previous pregnancy delivered as preterm before 32 weeks gestation age. See table 2.

Table 2. The group of 125 patients of 30-32 weeks gestation age

Nr. of Patients	Prolongation of Pregnancy	Obstetrical History	Tocolytics use				Corticosteroids use
			Indomet hacin	Ritrodin e	Nifedipin e	Magnesi um sulfate	
90 (80) (10)	5 weeks	G 2	+	+	+	+	+
		G2P1A0					
		G2P0A1					
15	6 weeks	G 2 G2P1A0	+	+	+	+	+
20 (10) (10)	4 weeks	G 2 & G 3	+	+	+	+	+
		G3P0A2					
		G2P1A0					

Abbreviation: G = Gestation, P = Parity, A = Abortion. + indicates use of respective tocolytics

Discussion

In medicine the best way to cure is prevention; however, this is and it will be the challenge of health care for a long time. Preventing preterm labor is a major challenge for modern obstetric medicine. Spontaneous preterm labor often occurs without warning or previous indication, but the goal of preterm labor management is to prolong pregnancy as safely as possible to permit fetal development and maturation (Copper RL, et al., 1990). There are a few factors that have been considered as risks of preterm labor like: maternal age (less than 18 or more than 40 years old), smoking, substance abuse, previous history of preterm delivery, previous history of second trimester abortion, uterine anomalies, infection, trauma. Nevertheless, almost half of spontaneous preterm labor is idiopathic (Leitch H, Bodner-Adler B, Brunbauer M, et al., 2003; Behrman RE, et al., 2007). The management of preterm labor consists generally in two categories: the first category is emergency management, by use of corticosteroids and emergency tocolytic therapy that allow the transfer of the patient to better health care facility like a regional hospital or tertiary hospital. The second category is the maintenance with tocolytic therapy where it is still on the debate among clinicians about risks and benefits (Gabriel R, Harika G, Saniez D, et al., 1994; Gyvetvai K, Hannah ME, Hodnett ED, et al., 2001; King JF, et al., 2004).

Conclusions

Our study brings an impressive conclusion in regards to maintenance with tocolytic therapy in pregnant women diagnosed with preterm labor on individual bases that meet the criteria shows enormous benefit in prolonging the pregnancy as far as there is no emergency indication for iatrogenic preterm birth for fetal or maternal cause. As well we support the evidence that neonatal outcome is greater when delivery is made in a

specialized pediatric unit as neonatal intensive care unit and in tertiary care centers where is available an experienced resuscitation team and better equipped unit. Nonetheless, use of larger population and more meticulous studies need to be done in order to offer suitable guidelines.

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