Comparative Study between cervical cerclage and weekly progesterone injection on outcome of preterm labour in patients with history of preterm labour

Thesis

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Abstract

Prematurity is the leading cause of neonatal death and handicap. Although all births before 37 weeks of gestation are defined as preterm, most damage and death occurs in infants delivered before 34 weeks. Improvements in neonatal care have led to higher rates of survival among very premature infants, but a major effect on the associated mortality and morbidity will be achieved only by better identification of women at high risk for preterm delivery and by development of an effective intervention to prevent this complication.

The prophylactic administration of progesterone beginning in mid-gestation to women who previously had a preterm birth has been shown to reduce the rate of recurrence. Also use of prophylactic cervical cerclage reduces preterm labour but the preference of which method remains an area of discussion.

Keywords:

Preterm labour -17 OH progesterone – cervical cerclage

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Abbreviations

American College of Obstetricians and Gynecologists	ACOG
Blood pressure	BP
Centimeters	cm
Cardiotocograph	CTG
Cervical length	CL
Confidence Interval	CI
Fetal birth weight	FBW
Full blood count	FBC
Fetal fibronectin	fFN
Grams	g
Group B streptococcus	GBS
Hemoglobin	Hg
Intramuscular	IM
Intravenous	IV
Microscopy / culture / sensitivity	M/C/S
Milligram	mg
Minutes	min
Millimeters	mm
Millimeters of mercury	mmHg
Mid stream urine	MSU
Neonatal intensive care unit	NICU

Non significant	NS
Preterm premature rupture of membranes	PPROM
Premature rupture of membranes	PROM
Preterm labour	PTL
Preterm birth	PTB
Randomized controlled trials	RCTs
Spontanous preterm birth	SPTB
Transvaginal cervical length	TVCL
Vaginal examination	VE
Versus	Vs
17- hydroxy progesterone	17-OH P

Figures and Tables

Figures

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Introduction

Preterm birth, defined as childbirth occurring at less than 37 completed weeks or 259 days of gestation, is a major determinant of neonatal mortality and morbidity and has long term adverse consequences for health (1).

Preterm birth rates have been reported to range from 5% to 7% of live births in some developed countries, but are estimated to be substantially higher in developing countries (2).

These figures appear to be on the rise. Events leading to preterm birth are still not completely understood, although the etiology is thought to be multifactorial. It is, however, unclear whether preterm birth results from the interaction of several pathways or the independent effect of each pathway. Causal factors linked to preterm birth include medical conditions of the mother or fetus, genetic influences, environmental exposure, infertility treatments, behavioural and socioeconomic factors and iatro- genic prematurity (3).

Children who are born prematurely have higher rates of cerebral palsy, sensory deficits, learning disabilities and respiratory illnesses compared with children born at term. The morbidity associated with preterm birth often extends to later life, resulting in enormous physical, psychological and economic costs(4).

Although progesterone is known to have many actions beneficial to the maintenance of pregnancy, the exact mode of action of 17 alpha hydroxyprogesterone caproate therapy in preventing preterm labor and delivery is not known. ***(5).*** Intervention with weekly progesterone injections (250 mg 17 alpha hydroxyprogesterone caproate (17OHPC) , (17-alpha-hydroxyprogesterone caproate is a natural metabolite of progesterone that is produced by the placenta itself . This intervention from 16–20 weeks up to 36 weeks of gestation had been chosen as it has been proven that this prophylactic administration of 17OHPC injections is effective in reducing the preterm birth rate in singleton pregnancies at high risk for a spontaneous preterm delivery but, there are no data on the effectiveness of progesterone in the prevention of preterm birth in multiple pregnancy.(6).

In four trials that compared elective cerclage versus no cerclage or bed rest, no overall reduction in total pregnancy loss and early pregnancy loss (less than 24 weeks' gestation) was observed in the women who underwent cerclage [relative risk (RR) 0.86; 95% confidence interval (CI) 0.59–1.25]. There were also no overall significant differences between preterm delivery rates (RR 0.88; 95% CI 0.76–1.03). The largest among the four trials was coordinated by MRC/RCOG (2) and this trial yielded a small reduction in births under 33 weeks of gestation (RR 0.75; 95% CI 0.58–0.98).(7).

The women with a prior spontaneous preterm birth less than 34 weeks and cervical length less than 25 mm, cerclage reduced previable birth and perinatal mortality but did not prevent birth less than 35 weeks, unless cervical length was less than 15 mm (8).

The Aim of Work

Comparison between prophylactic cervical cerclage and weekly progesterone injection on outcome of preterm labour in patients with history

of preterm labour regarding :

-Gestational age at time of delivery

-Tocolytic therapy

-Perinatal outcome.

Review

Chapter 1