

Part 4: Tertiary prevention

Tertiary prevention includes interventions once preterm labor has set in and can't be stopped. This includes attempts to reduce mortality and morbidity associated with preterm/LBW births. The measures employed include the following:

1. Maternal transport:

Neonatal care has undergone a transformation in the last 2 decades. Regionalization of perinatal care has improved neonatal outcomes. Lumley et al²⁹⁷ reviewed population-based studies from the US, Canada, England, Australia and Netherlands suggesting advantages of delivery at perinatal centers especially for extreme preterm infants (< 27 weeks gestation) in terms of mortality. For mildly preterm infants the benefit was not consistent.

In utero transfers of the fetus, when possible, to a tertiary care centre has been shown to improve outcomes. Transport care systems for mothers with threatened preterm labor are in operation throughout Canada.

Yeast et al²⁹⁸ found that the RR of neonatal mortality for VLBW was 2.28 in level II centers compared with level III centers.

Chien et al²⁹⁹ reported that infants born outside perinatal centers were at higher risk of death after adjustment for perinatal risks and admission illness severity (adjusted OR 1.7, 95% CI 1.2, 2.5). The authors strongly suggested maternal transfers to perinatal centers when possible.

Conclusion:

Maternal transport of women in threatened preterm labor to tertiary level care facilities improves outcome and every effort should be made to facilitate the transfer.

2. Corticosteroids:

Liggins et al³⁰⁰ showed benefit of glucocorticoids in advancing fetal lung maturation in women in preterm labor. The National Institute of Health issued a consensus statement in 1994 after reviewing the evidence suggesting antenatal use of glucocorticoids.³⁰¹

Crowley et al³⁰² reviewed 18 studies assessing the efficacy of corticosteroids given antenatally due to threatened or planned preterm birth for the Cochrane Collaboration. There was a reduction in neonatal mortality (RR 0.63 95% CI 0.51, 0.77) and respiratory distress syndrome (RR 0.64, 95% CI 0.56, 0.72). There were no adverse consequences in the mother or the fetus. Despite conclusive evidence of its benefits wide institutional differences persist in the practice of administration of corticosteroids for women in preterm labor.³⁰³

Mastrobattista et al³⁰⁴ reviewed the controversies regarding steroid use. A single course of steroids was found to be safe for mother and fetus. There is no consensus regarding the gestational age of administration and the number of repeat courses. Aghajafari et al³⁰⁵ in a systematic review of animal studies of multiple courses of antenatal steroids have concluded that it may be beneficial in

terms of lung function but have adverse effects on brain function. Studies regarding the effects of repeated courses of corticosteroids which are ongoing in Canada (MACS - Multiple Antenatal Corticosteroid Study), Australia and the US will provide guidance in this area.

Aghajafari et al³⁰⁶ in a systematic review of observational studies of multiple doses of antenatal corticosteroids failed to establish a true effect due to confounding variables. The authors suggested the need for further randomized controlled studies.

Conclusion:

Antenatal corticosteroid administration is recommended for women in threatened preterm labor at the age of fetal viability. Obstetricians should ensure widespread and more frequent use of glucocorticoids. Further research is needed to establish the role of multiple courses of corticosteroids and until such evidence is available multiple courses of corticosteroids should be avoided.

3. Maternal therapy:

Maternal oxygen and administration of nutrients via amniotic fluid or umbilical cord are discussed in detail in the section on nutritional interventions.