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Maternal β-Blocker Usage and Breast Feeding in the Neonate

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Background: β-adrenergic receptor antagonists (β-blockers) have continued to receive widespread use as they remain first line treatment for a variety of disorders including hypertension, ischemic heart disease and arrhythmias. The lipophilic nature and weak basic properties of the β-blocker class promote drug delivery into breast milk. Pharmacologic and pharmacokinetic studies on various β-blockers have demonstrated accumulation in breast milk to concentrations up to six times higher than that of corresponding maternal serum levels. In one instance, the dose of labetalol that an infant obtained through breast feeding was enough to attain serum levels equal to that of the mother. Bradycardia associated with maternal atenolol usage has been reported in a five day old term breast feeding infant which resolved when breast feeding was discontinued. In review of the literature, there exists a few other cases reported of excessive β-blockade in nursing infants of mothers utilizing various β-blockers. There is no large scale study evaluating the incidence of adverse events in infants breast fed by women on β-blockers. Current American Academy of Pediatric recommendations, however, state that β-blockers are safe with breast feeding.

Purpose: Prospectively evaluating the incidence of adverse events in infants breast fed by women receiving β-blockers.

Methods: In this study, a cohort of 94 women receiving β-blockers who had called our reproductive toxicology program (Motherisk) between 1994 and 1996 were prospectively followed. Follow-up included questions in regards to perinatal complications, breast feeding, maternal/infant health issues, and number of physician and emergency room visitations.

Results: Of 94 women evaluated, 46 were on β-blockers (of which 17 did not breast feed) and the remaining 48 were matched controls. 13 mothers were receiving atenolol, 8

propranolol, 6 metoprolol, 1 sotalol, and 1 acebutolol. Control and treatment groups were matched for and did not differ from each other with respect to maternal age, parity, duration of breast feeding, nor infant age at follow-up. Only three reports of neonatal adverse events were noted. One in the control group and two in the treatment group. These consisted of irritability, lethargy, and sleepiness respectively. Mothers in the treatment group were on atenolol and propranolol medications for hypertension. No etiology was given for the irritability associated with the infant in the control group, however, mother was concomitantly on a steroid for asthma. There was no statistical difference in the incidence of these clinical events and number of physician and emergency room visitations between the treatment and control groups ($p = 0.29$).

Conclusion: β-adrenergic receptor antagonist use during breast feeding does not pose significant concerns to the breast feeding infant.

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