maternal serum thromboxane B_2 levels. When the aspirin and placebo groups were combined, women with a two-fold or greater reduction in thromboxane B_2 levels had less pre-eclampsia, 1.9% (6/314) vs. 5.7% (14/244) ($P = 0.016$), less preterm delivery (5.7% vs. 10.7%, $P = 0.032$), fewer small-for-gestational-age newborns, 9 of 314 (2.95) vs. 17 of 244 (7%) ($P = 0.023$), and a higher mean birth weight, 3314 g versus 3121 g ($P = 0.0001$). *Conclusions:* Women with a two-fold or greater longitudinal reduction in maternal serum thromboxane B_2 had less pre-eclampsia and prematurity, fewer small-for-gestational-age newborns, and higher birth weights than women with less than a two-fold reduction.

A multi-center comparative study of 17 experts and an intelligent computer system for managing labor using the cardiotocogram
Keith R.D.F.; Beckley S.; Garibaldi J.M.; Westgate J.A.; Ifeachor E.; Greene K.R.
GBR
BR J OBSTET GYNAECOL 1995 102/9 (688–700)

Objectives: To investigate (1) whether an intelligent computer system could obtain a performance in labor management comparable with experts when using cardiotocograms (CTGs), patient information, and fetal blood sampling and (2) whether experts could be consistent and agree in their management of labor. *Subjects:* An intelligent computer system and 17 clinicians experienced in fetal monitoring from 16 centers in the UK. *Design:* Fifty cases with complete intra-partum CTGs and clinical data were reviewed by each expert and the system independently on two occasions, at least 1 month apart. Each CTG was scored in 15 min segments according to a protocol and estimates of the cervical dilatation and fetal scalp blood pH were given when requested. *Main outcome measures:* Consistency and agreement in the recorded scores, agreement and timing of cases recommended for cesarean sections, fetal blood sampling rates, intervention in cases with poor outcome and intervention in cases with good clinical outcome. *Results:* The system (1) Agreed with experts well and significantly better than chance (67.33%, kappa = 0.31, $P < 0.001$). (2) Was highly consistent (99.16%, kappa = 0.98, $P < 0.001$) when used by two operators independently. (3) Recommended no unnecessary intervention in cases with normal delivery and good condition (cord artery pH > 7.15, vein pH > 7.20, 5 min Apgar > 9 and no resuscitation). This was better than all but two of the experts. (4) Recommended delivery by cesarean section in 11 cases; at least 15 of the 17 experts in each review also recommended cesarean section delivery in these cases. The majority did so within 15 min of the system and two-thirds did so within 30 min. (5) Identified as many of the birth asphyxiated cases (cord arterial pH < 7.05 and BDecf ≥ 12, and Apgar score at 5 min ≤ 7 with neonatal morbidity) as the majority of experts and one more than was acted upon clinically. The experts were found to be consistent and to agree. There was good agreement in the cases and the timing of cesarean section recommendations. The majority of experts did not recommend operative intervention in cases which had a normal delivery and good outcome, but did recommend operative interventions in 10 of 12 cases delivered with cord arterial pH < 7.05. However, in one of the cases delivered with birth asphyxia, 14 of the 17 experts and the system failed to recommend intervention. *Conclusions:* The system's performance was found to be indistinguishable from the experts' in the 50 cases examined, but it was more consistent. This demonstrates the potential for an intelligent computer system to improve the interpretation of the CTG and decrease intervention. Furthermore, the good performance of most experts in this study demonstrates the potential effectiveness of the CTG and raises important questions regarding why the CTG has fallen short of expectations in current practice.

Neonatal cerebral arterial flow velocity waveforms in term infants with and without metabolic acidosis at delivery
Morrison F.K.; Patel N.B.; Howie P.W.; Mires G.J.; Herd R.M.
GBR
EARLY HUM DEV 1995 42/3 (155–168)

To define the effects of acid base status at delivery on neonatal cerebral artery flow velocity waveform patterns obtained using Doppler ultrasound during the first week of life, a longitudinal comparative study of neonates born at term with and without evidence of metabolic acidosis in the umbilical artery was undertaken. Eighty-two appropriate-for-gestational-age infants delivered after uncomplicated pregnancies with non-acidotic umbilical artery blood gases and in whom no neonatal complications were noted were studied to establish reference values of neonatal cerebral arterial vascular resistance index (RI) in normal term infants during the first week of life. A further 189 infants were grouped according to the presence and severity of metabolic acidosis at delivery, and also the presence of high-risk features in the antenatal period. In the normal non-acidotic infants, over the first 24 h of life, there was a significant fall in the cerebral arterial resistance index (RI) in all the vessels examined, after which a steady state value was attained with no significant changes in vascular resistance index being noted during the remainder of the study period. The fall in RI between 12 and 24 h of age was consistent in all study groups. Infants with metabolic acidosis at delivery had blood flow patterns compatible with decreased resistance to flow in both anterior and middle cerebral arteries which persisted throughout the first week of life. This reduction in cerebral vascular resistance was most marked in those infants with severe metabolic acidosis. The majority of severely acidotic infants had a benign clinical outcome in the first week of life and all infants had normal cerebral ultrasound scans during the neonatal period. These findings suggest that metabolic acidosis at birth is associated with changes in neonatal cerebral arterial vascular resistance during the first week of life, and in the presence of a benign clinical course the significance of this observation with regard to neuro-developmental outcome requires evaluation.

Predictors of neonatal encephalopathy in full term infants
Adamson S.J.; Alessandri L.M.; Badawi N.; Burton P.R.; Pemberton P.J.; Stanley F.
AUS
BR MED J 1995 311/7005 (598–602)

Objective: Preliminary investigation of the contribution of