Improving perinatal outcomes through access to quality prenatal screening and diagnosis; what we need to know

Advances made in the field of prenatal screening and diagnosis has seen a shift in the practice of antenatal care from relying on opinion to evidence. The screening and diagnostic techniques include an array of biochemical tests, ultrasonography and other imaging modalities. Some of these techniques are more than 30 years old and yet they are still not accessible to all women in the region. While we appreciate the relevance of the traditional 'antenatal profile' tests (haemoglobin, blood group, VDRL and HIV tests) and their contribution to maternal and child health over the years, it is evident that there is a lot more that can be done. Research is now geared towards identification of newer and better ways to not only diagnose congenital anomalies and pregnancy-related complications but also to predict adverse events and offer interventions that may improve perinatal outcomes. This can now be done as early as 11-13 weeks gestation for most conditions. However, achieving this level of care requires well structured and comprehensive models of antenatal care.

Traditionally pregnant women had their antenatal care concentrated in the third trimester and this still remains a common practice in many units. It was thought that the risk of pregnancy related complications increased with advancing gestation. Consequently, there were four-weekly visits from 16 till 32 weeks, then every fortnight till 36 weeks and weekly thereafter till delivery. This approach was however, not supported by any evidence and has since been replaced by newer models, developed with the main goal of optimising the quality of care while reducing cost. One such model is the Focused Antenatal Care (FANC) developed specifically for low income countries. The basic component of this model was a set of effective, goal-oriented activities implemented on a four-visit schedule, starting at 16 weeks. Initial evaluation of the model showed it to be cost effective and acceptable though it did not improve most of the perinatal outcomes (1). Like many programmes tailored specifically for developing countries, emphasis has been on economy-based rather than scientific-based interventions resulting in substandard maternal care with poor outcomes evident over the years. It may be time for us to embrace the technological advances and move with speed to catch up with the rest of the world.

With the scientific advances witnessed in the last three decades it is now possible to predict or detect many pregnancy complications early in pregnancy. This involves the use of biochemical markers such as PAPP-A for prediction of fetal growth restriction; cervical length screening for preterm labour; uterine artery pulsatility index, placental growth factors, endoglin, Inhibin A, activin A and PAPP-A for pre-eclampsia, PAPP-A and serum free B- hCG for macrosomia, Nuchal Translucency (NT), ductus venosus waveforms, tricuspid regurgitation and an array of other biochemical markers for the detection aneuploidies. Developing specific algorithms using maternal characteristics, biochemical and biophysical tests can help predict these conditions as early as 11-13 weeks. This will in turn form the basis for triaging the women into either routine or specialised care during the rest of the pregnancy (2). The common conditions specific to the region such as malaria and HIV could be factored in such algorithms. There is therefore need to review the current practices including FANC with the aim of establishing prenatal care services with predefined objectives and findings that would generate likelihood ratios that can be used to modify the individual patient- and disease-specific estimated risk from the initial assessment early in pregnancy rather than in late gestations. This can only be achieved by strengthening the existing laboratory and ultrasound services and formulating relevant national standards and guidelines.

In this issue of the journal, Achila and Stones (3) demonstrate that the level of knowledge on various components of Down's syndrome screening among the key health workers is low. If we are to use this as a proxy to their level of awareness on various components of prenatal screening and diagnosis then it is evident that there is need to further educate the health workers, policy makers and the public at large on the relevance of these tests.

The importance of targeted prenatal screening may be demonstrated in the prediction and treatment of preterm labour which remains a leading cause of perinatal death and handicap in children. Using an algorithm combining maternal characteristics and obstetric history, the patient specific risk for spontaneous delivery before 34 weeks can be determined as early as 11-13 weeks (4). This can then allow for appropriate interventions such as cervical cerclage or progesterone to be instituted in those found to be at risk (5).

With increased prenatal screening and diagnosis, there will often arise situations where someone has to break bad news. This may range from informing the woman about fetal anomalies to conditions with poor prognosis or even death. There is therefore need for clinicians to be equipped with good communication skills as a prerequisite for quality prenatal care. Even though the case report by

Kihara *et al* (6) addresses the issue of breaking bad news following maternal death, the approaches highlighted by the authors i.e. bluntness, forecasting and stalling remain relevant regardless of the nature of the encounter.

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