

Targeting the duct

Echoing the duct, and measuring parameters such as left atrial size, will always be the mainstay of assessment for babies where there is clinical suspicion of a significant patent duct. Routine anti-duct treatment of all babies under a certain birth weight or gestation, though briefly fashionable, has faded out through lack of convincing evidence. The new and interesting question is whether to actively seek out those babies with a significant duct earlier than symptoms develop, and treat it if it fulfils criteria for being actually or potentially haemodynamically significant. Exactly what is meant by “significant” is a matter for debate, but Farombi-Oghuvbu *et al* have made a contribution by demonstrating that N-terminal pro-B-type natriuretic peptide concentrations may be a useful marker for “significance”. Exactly how such measurements may be used, and how they may add value to, or substitute for echocardiography, will need further work. *See page F257*

A new window on the neonatal circulation

Attempts to understand the cardiovascular status of neonates are bedeviled by the problem that we routinely measure the wrong variable (blood pressure), but measuring anything resembling the right variables, such as cardiac output, is fraught with difficulties. Measurement of superior vena cava flow (the subject of several papers in *F&N* in recent years) seems to be difficult and has not caught on outside a few centres. Stark *et al* suggest that we look in a different direction and measure microvascular flow.

Their paper breaks new ground by applying this technique, well established in the adult literature, to preterm infants. They have demonstrated that the technique works, and they have gone on to show that microvascular flow, and by inference microvascular tone, has a substantial influence on circulatory regulation. As yet there is no direct clinical application, but it is to be hoped that this relatively straightforward technology can be applied by researchers across the world to enhance our depressingly limited understanding of the neonatal and transitional circulations. Who knows, one day we may understand enough to use inotropes sensibly. *See page F274*

Volume guarantee or HFOV?

The paper by Lista *et al* addresses the question as to whether patient-triggered ventilation with volume guarantee (VG), compared with high-frequency oscillatory ventilation (HFOV), can reduce the production of the potentially harmful cytokines that seem to mediate neonatal lung injury and ultimately bronchopulmonary dysplasia (BPD). The answer seems to be that in terms of cytokine production, VG, patient-triggered ventilation is less harmful than HFOV. Whether this would translate into better survival or lower rates of BPD remains to be seen. *See page F252*

Mewling and puking

Shakespeare's stereotype of an infant (As You Like It: act 2, scene 7) reflects a routine problem of term and preterm babies alike. But what makes babies throw up – or at least, become feed

intolerant? It's a hugely common phenomenon, but one that on the whole is grudgingly accepted rather than studied and understood. Kairamkonda *et al* have shown that amylin may be a key mediator of poor or delayed gastric emptying in preterm babies, and that circulating concentrations correlate not just with gastric residuals but also with the time to establishing full enteral feeds. Amylin, and the peptide family to which it belongs, has been known about for two decades, but serious interest in how it might mediate the behaviour of the upper gastrointestinal tract in neonates has had to wait till the 21st century. If amylin does indeed turn out to be the pivotal hormone, then an antagonist would be of enormous clinical interest. *See page F265*

Take a deep breath...

As long as I can remember, there has been interest in the possibility of delivering drugs directly to the lungs by nebulisation and inhalation. The problem is, it never seems to work, regardless of whether a baby is intubated or not. Kohler *et al* used sodium cromoglycate as a marker for lung deposition, and compared the lung deposition attained by three different nebuliser devices in spontaneously breathing infants without bronchopulmonary dysplasia. The devices all performed poorly, in the sense that none achieved lung deposition better than 1% of the nominal dose, but the LC Star was the best of the three that were compared. Clearly we have a long way to go if we want to use the respiratory route to deliver drugs directly to the lung, if the best a nebuliser can achieve in a baby is less than 1% of nominal dose. *See page F275*