OBJECTIVE To assess whether fetal biometric or Doppler parameters may support the prediction of emergency balloon atrio-septostomy (e-BAS) at birth in case of Transposition of the Great Arteries (TGA).

METHODS This retrospective study includes 34 consecutive cases of fetal TGA diagnosed and managed over the last 7 years at our institution. On the last prenatal examination available, the following variables were retrieved from the computerised database and analysed: BPD centile, HC centile, umbilical artery PI (UAPI), middle cerebral artery PI (MCAPI), cerebroplacental ratio (CPR). In addition, we categorized the appearance of the foramen ovale flap (FOF) as restrictive, redundant or normal. Neonatal parameters included time to BAS and need for e-BAS and O2 saturation. Bas was categorised as emergency (< 30 minutes after birth), urgent (31-60 minutes), or not urgent (> 1 hr after birth). The statistical analysis was carried out vs need for e-BAS or urgent BAS.

RESULTS Of the 34 cases, 3 required an e-BAS, 16 an urgent BAS, 14 non-urgent BAS and in 2 cases BAS was not performed. Of all the biometric (BPD centile, HC centile) and Doppler (UAPI, MCAPI, CPR) parameters, a low CPR was associated with the need for an e-BAS (p = 0.05), whereas the UAPI linearly correlated with the O2 saturation (p < 0.05). A restrictive/redundant FOF was significantly associated with urgent BAS (p < 0.05), but the FOF was normal in 2/3 cases of e-BAS (false negatives).

CONCLUSION Despite the relatively small numbers, our preliminary study seems to demonstrate that the evaluation of the UAPI and the CPR may help identifying the foetuses with TGA at risk of an e-BAS at birth.