BACKGROUND: Routine assessment of the neonatal brain is performed by ultrasound through the anterior fontanelle. The infratentorial structures can be visualised more detailed by sonography through the posterolateral fontanelle. This prospective study was performed to evaluate anterior fontanelle and posterolateral fontanelle for the detection of infratentorial lesions. PATIENTS: Cerebral sonography was performed in 100 preterm infants at the median (range) age of 9 days (0 - 91 days). Median gestational age at birth was 33 weeks (23 - 36 weeks). METHOD: Scanning through the posterolateral fontanelle was performed after sonography through the anterior fontanelle. RESULTS: Neuropathology could be detected in 22 of the 100 preterms. In six patients infratentorial lesions were present in association with supratentorial pathology. The infratentorial abnormalities were clots in the IV. ventricle (n=3), clots in the cisterna magna (n=2), dilation of the IV. ventricle (n=3), dilation of the aqueduct (n=1), and a intraparenchymatous echodensity in the cerebellum (n=1) which receded. When clots were present in the lateral ventricles only the sonography through the posterolateral fontanelle allowed the detection of the infratentorial abnormalities. CONCLUSION: Sonography through the posterolateral fontanelle allows the detection of infratentorial pathology missed by sonography through the
anterior fontanelle. Additional scanning through the posterolateral fontanelle should be part of the standard neonatal cerebral sonography.