

J Perinat Med. 1998;26(2):83-8.

Quality assessment of two lactate test strip methods suitable for obstetric use.

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Accuracy of lactate determinations in cord blood was tested for one reflectometric (Accusport) and one amperometric (Lactate Pro) microvolume test strip lactate meter. Both meters, using a whole blood sample, measure lower levels of lactate than a reflectometric device considered as a reference method, which analyses lactate in plasma. Readings were unaffected irrespective of lactate concentrations for the Lactate Pro, whilst the Accusport overestimated low lactate concentrations and underestimated high values. Both lactate meters underestimated lactate concentrations at high hematocrits, as compared with the reference method. The Lactate Pro has a fixed sample volume of 5 microliters while the Accusport uses random blood drop as sample volume. However, in analyses with less than 20 microliters sample volume considerable underestimation was found with the Accusport. Coefficient of variation was 3.8-8.9% for the Accusport and 3.1-4.0% for the Lactate Pro within lactate concentrations between 2.1 and 5.3 mmol/l. The amperometric device, the Lactate Pro, performed best in these tests dealing with fetal blood lactate concentrations. The new technique can be a useful tool in perinatal research as well as in obstetric practice.