

Variable decelerations: do size and shape matter?

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Abstract

OBJECTIVE: To determine the ability of variable decelerations and 8 subtypes, defined by size and shape, to discriminate tracings between babies with normal umbilical artery gases (N) and those with metabolic acidemia (MA).

METHODS: Tracings from the last 4 hours from N-3320 babies with base deficit levels under 8 mmol/L, and from MA-316 babies with base deficits over 12 mmol/L were analyzed using computerized pattern recognition. We created receiver operating characteristic curves and area under the curves (AUCs) for each deceleration subtype.

RESULTS: Only 3 subtypes showed significant discrimination: those with a prolonged duration (AUC 0.6109 $P < 0.0001$), loss of internal variability (AUC 0.5694 $P < 0.0001$) or with "sixties" criteria (AUC 0.5997 $P < 0.0001$). A variable deceleration met the sixties criteria if two or more of the following were present: depth was 60 bpm or more, lowest value was 60 or less, duration was 60 seconds or longer. All other subtypes were no better than chance.

CONCLUSIONS: Finer gradation within the middle category of electronic fetal monitoring classification is needed because most tracings, including those from babies with MA, will be located in the Category II. This analysis identifies which variable decelerations have a significant association with MA and which do not.