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Abstract title: Apparently isolated mild fetal cerebral ventriculomegaly: a scoping review and recommendations for future research

Objective: The goal of the current scoping review was to clarify this uncertainty by estimating the frequency and severity of atypical neurodevelopmental outcomes once apparently isolated MFCVM has been detected and if differences in variables including dilatation size, stability, laterality, and symmetry affect the expected outcome.

Study Design/Methods: A comprehensive search strategy was formulated to capture most of the published work on apparently isolated MFCVM and subsequent neurodevelopmental outcomes across seven electronic databases. Inclusion criteria for the current review comprised of only considering those studies where children were followed until the age of 5 years and when prenatal scans were completed as of the year 2007 (i.e. when the guidelines for caliper placement for fetal cerebral ventricle measurement were established by the International Society of Ultrasound in Obstetrics & Gynecology; ISUOG).

Results: The search yielded a total of 9,759 possible citations, of which 11 studies were found to partially meet inclusion criteria. Corresponding authors from the 11 studies where contacted to request the subset of their data meeting criteria, and overall 11 cases where obtained from two studies. Of the 11 cases analyzed, the majority where found to have normal outcomes (n = 8, 72.7%), though at a smaller proportion than would be expected given previous research. Of the MFCVM variables of interest previously described, only data on laterality was available for all 11 cases and the number of unilateral MFCVM cases (n = 2) did not allow for meaningful comparison between groups.

Conclusions: The current review illustrates that few recent studies concerning apparently isolated MFCVM and neurodevelopment outcomes currently exist, particularly when taking into consideration long-term follow-up. The cases analyzed in the current review suggest that there may be a larger proportion of atypical neurodevelopment outcomes following the detection of MFCVM if follow-up is until an age when more subtle findings may become more apparent. The lack of relevant studies and the preliminary findings of the current review demonstrate the need for additional research on apparently isolated MFCVM in order to draw statistically significant conclusions with clinical utility.