Which Instrument Is Best for Chorionic Villus Sampling?

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There is limited evidence that for transcervical chorionic villus sampling (CVS), the use of small forceps may be more effective and less painful than the use of an aspiration cannula. However, the available randomized trials that compared different instruments or techniques for CVS using a transabdominal or transcervical approach are too small to provide reliable evidence that favors one instrument or technique over another, concluded the Cochrane Pregnancy and Childbirth Group.¹

The risks of CVS include miscarriage if the gestational sac is punctured or if multiple passes through the uterus are required to retrieve an adequate testing sample (greater than 5 mg of chorionic villi). To determine whether certain instruments or techniques were associated with more favorable outcomes, researchers reviewed and analyzed 5 studies involving the use of forceps and cannulae for transcervical CVS and 2 studies comparing different needle techniques for transabdominal CVS.

For the transcervical CVS trials, which included 472 women, an inadequate sample was obtained more often with the use of a cannula than with biopsy forceps. In addition, use of a cannula was found to be more painful and more costly (about $184 more per procedure). A comparison of different cannulae showed that a Portex cannula was more often associated with an inadequate sample than a silver cannula and was associated with a more difficult or painful procedure than an aluminum cannula. Despite the limited evidence that the use of small forceps may be more effective and less painful than the use of an aspiration cannula for transcervical CVS, the evidence does not support a change in clinical practice for clinicians who are more familiar with or favor one technique over another.¹

In the 2 transabdominal CVS trials that involved 285 women, different continuous negative pressure aspiration techniques were compared with a discontinuous negative pressure system created by a syringe attached to a 20-gauge needle. One trial found no significant differences between study groups in the mean weight of the collected chorionic villi sample or in the rates of failure to obtain an adequate sample on the first attempt. However, the other trial found that the standard discontinuous technique using a syringe was associated with less favorable outcomes for both the mean weight of the collected sample and the rate of failure to obtain an adequate sample on first attempt. Miscarriage rates, perceived pain ratings, and culture success rates were similar between groups.

Pertinent Points:
- There is limited evidence that for transcervical CVS, the use of small forceps may be more effective and less painful than the use of an aspiration cannula, but the evidence does not support a recommendation for a change in clinical practice.
- No differences in clinically important outcomes were found between the use of a continuous versus discontinuous negative pressure needle aspiration system for transabdominal CVS.


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