Mecocion aspiration syndrome is a disorder of pulmonary function, believed to occur when the baby passes stool (meconium) before birth. Because the baby can aspirate amniotic fluid while in the uterus or at the first breath, meconium can get into the baby’s airways. This can obstruct the airway or cause irritation to the lungs, leading to respiratory distress at birth or interfering with the transition to independent cardiovascular circulation. In some cases, it can result in neurological damage, or even death. About 5% of pregnant women have thick meconium staining of the amniotic fluid, and about 5% of these babies develop meconium aspiration syndrome.

A large, multi-centre trial has concluded that amnioinfusion — the process whereby a saline solution is introduced into the amniotic cavity — does not prevent meconium aspiration syndrome, suggesting that factors other than meconium may be contributing to this problem.

For pregnant women, this could mean avoiding an unnecessary intervention. “While this finding will not improve the outcome for the baby, it will limit our interventions,” said Dr. Bruno Piedboeuf, neonatologist at the Centre hospitalier universitaire de Québec. This is important, since any intervention that involves putting in a catheter can have adverse side effects. “We try to practise evidence-based medicine, but too often, our practices are based on small clinical trials, or sometimes just case reports,” Piedboeuf added. “This study is important because it shows that what was believed to be a very good practice did not change anything.”

The study also suggests that what is called meconium aspiration syndrome may actually be the result of several other factors. Traditionally, chest X-rays are used to diagnose the syndrome, yet researchers found a poor correlation between chest X-ray findings and the clinical status of the baby. “The babies could be clinically quite sick, but the chest X-ray abnormality was not necessarily severe,” Fraser explained. “This suggests that there may be more going on in this syndrome than simply aspiration of the meconium.”

One possibility is that these babies are already vulnerable from other intrauterine stresses. “More and more, we think that whatever stresses are making the baby pass meconium may be what is affecting the other systems in the baby,” said Piedboeuf. “Mecocion is just one element of the picture. We need to focus on why the baby is passing meconium. Intuitively, this is what we have been doing, and I think that is why outcomes of meconium aspiration syndrome have improved in the last 20 years.”