

Comparison of Respiratory Outcomes between Infants with Thick and Thin/Moderate Consistency Meconium-Stained Amniotic Fluid

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Objectives: To investigate respiratory interventions and outcomes compared between infants with thick and thin/moderate consistency meconium-stained amniotic fluid (MSAF), and to identify characteristics of infants with MSAF.

Methods: All live births of infants with ≥ 34 -weeks gestation and MSAF during June 2013 to September 2016 at Siriraj Hospital were retrospectively reviewed. Birth resuscitation interventions and short-term respiratory outcomes were compared between the thick (TM) and thin/moderate (NTM) consistency meconium groups.

Results: The incidence of MSAF was 5.32%. Ninety-nine percent were born at ≥ 34 -weeks gestation. Gastroschisis was the most commonly observed anomaly (28.2%). Of the 1,511 infants that were included, the TM group [464 infants (30.7%)] had a higher rate of respiratory support at birth than the NTM group [1,047 (69.3%) infants] (bag-valve-mask ventilation 7.8% vs. 5.3%, $p=0.059$; non-invasive ventilation (NIV) 2.2% vs. 0.7%, $p=0.011$; and, intubation 0.9% vs. 0.2%, $p=0.056$); however, there was no difference for chest compression or medication. The TM group was 7.2 times more likely to have meconium aspiration syndrome (MAS) (95% CI: 3.5-14.8, $p<0.001$), as well as 3.2 times more likely to have ventilation support (either NIV or mechanical ventilation) (95% CI: 1.6-6.60, $p<0.001$) than the NTM group. No significant difference was observed between groups for high-frequency ventilation, inhaled nitric oxide, or mortality.

Conclusions: The majority of MSAF were term, normal birthweight infants. Infants with thick consistency MSAF were more likely to require extensive birth resuscitation and ventilation support. An experienced team should be designated for birth resuscitation and early postnatal care in infants with thick MSAF.

