Audit on Neonatal Acidosis at Birth - A Single Unit Experience

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Background:

In fetal life, oxygen supply is dependent on maternal circulation, placental perfusion, gas exchange across the placenta. Any disturbance for these results the fetal acidosis due to anaerobic metabolism. Severe neonatal asphyxia can lead to adverse neonatal outcomes such as cardiac, neurologic, renal and/or respiratory complications. The fetal acidosis is defined by an umbilical cord arterial pH of less than 7.1 and severe acidosis define as pH less than 7.0. However, there are no any national or international acceptable levels for compare with, ideally it should be zero.

Objectives:

Identify antepartum and intrapartum risk factors associated with neonatal acidosis ?
Identify the sequalae of neonatal acidosis?

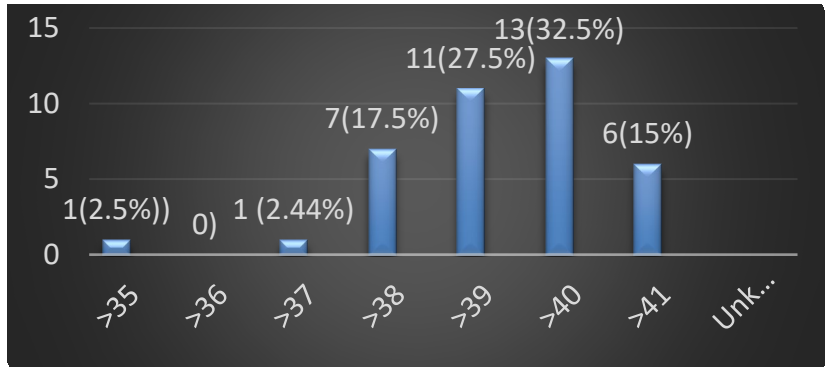
Methodology:

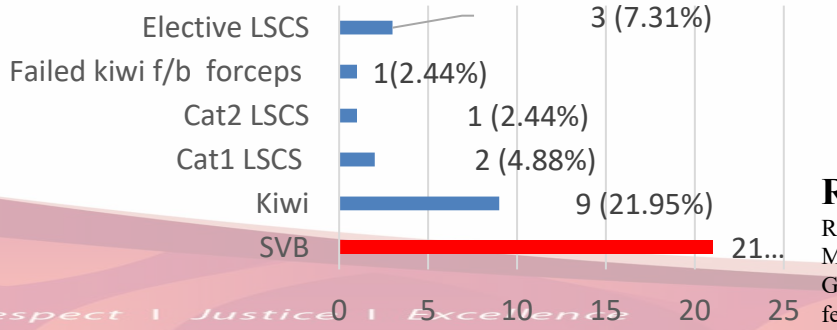
Retrospective audit conducted at SJOG, Midland, WA over a twelve-month period from March 2019 to March 2020. We used demographic variables and results from the hospital's perinatal database. Clinical risk factors in the antenatal period, birth complications, and other demographic variables were analyzed.

Results:

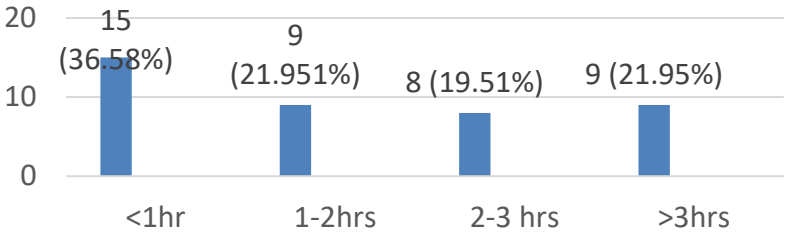
Total births: 2023
Neonatal acidosis (Cord Arterial pH <7.1) n= 41
Rate: 2.02%

- Mean gestation of delivery was 39.3 weeks
- 51.22% of the neonatal acidosis were with SVBs!!!
- 6 neonates had severe acidosis(pH<7).
- No HIE.
- Only 4% had fetal blood sampling.
- Average time from abnormal CTG to delivery: 99.7 minutes

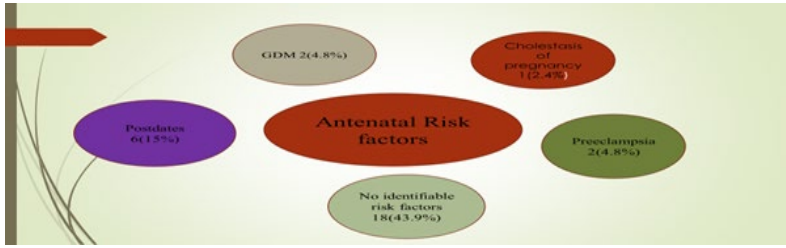




Correlation of second stage of labor with neonatal acidosis:



Antenatal risk factors associated with neonatal acidosis



Conclusion:

Clinicians need to beware of dropping pH in 2nd stage of labour. Intrapartum FBS in case of abnormal CTG should be done. Obstetric units should aim to reduce abnormal CTG to delivery time(Avg time 99.7mins)

Standard for neonatal acidosis: 0%

References:

RANZCOG. Intrapartum fetal surveillance: Clinical guideline- 4th ed. East Melbourne, VIC: RANZCOG. 2019.
Grivell RM, Alfirevic Z, Gyte GML, Devane D. Antenatal cardiotocography for fetal assessment. Cochrane Database of Systematic Reviews. 2015 (9)