

An Audit on Neonatal Acidosis at Birth

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Objective

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 percentages or levels for compare with, ideally it should be zero

Design

This is a retrospective audit conducted at St John of God Hospital, Midland, Western Australia over a one year period in 2020

Method

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 of 41 cases of severe acidosis were reported (rate of 2.02%, total births= 2023). Six neontaes had a sever acidosis. However, there were no cases of HIE during the study period.

The majority of cases occurred after 40 weeks of gestation (47%). 51% after normal vaginal delivery and 21%, 7%, 4% after vacuum, elective caesarean section and category 1 caesarean section. Only 4% had fetal blood samples due to CTG abnormalities during second stage in labour.

Interestingly, 41% had no specific antenatal risk factors. Among the risk factors during labor, meconium stained fluid (24%) and shoulder dystocia (8%) were the most common identifiable causes. 80% of the babies were within the normal birth weight limit (10-90th percentile) and 12% were growth restricted which not identifies in the antenatal period. Notably, 37% of them had a very short second stage of less than an hour, while 21% had a second stage of more than three hours.

68% require admission to a special care nursery, while 5% have to be transferred to specialized units via the NETS. The median length of stay in the special care nursery was 0.8 days (0 to 5 days)

Discussion & Conclusion

We found that the rate of severe acidosis in our department is high compared to other available studies.

The rate of pH deterioration is quite high in precipitated or rapidly progressing labour. Needs more fetal blood sampling in the second stage of labour, especially if delivery was not imminent with abnormal CTGs

It necessary to arrange long term follow up for these neonates to assess their outcomes.

We planned to continue this as a prospective audit and implement the necessary unit protocols for labour management specially in the second stage