Regional versus general anaesthesia for caesarean section

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This review suggests that general or regional anaesthesia does not have a clear superiority over each other when used during caesarean section. The choice of the method should be based on woman's preferences regarding some advantages and disadvantages of either approach and the availability of appropriate equipment and expertise to administer either type of anaesthesia.

RHL Commentary by Bamigboye AA

1. EVIDENCE SUMMARY

Published in 2006, this Cochrane review compared the effects of regional anaesthesia with those of general anaesthesia on maternal and infant outcomes. It includes 16 studies involving 1586 women. Appropriate randomized controlled trials were searched according to Cochrane protocol in December 2005.

The review found that the difference between the preoperative and postoperative haematocrit levels in women who had regional anaesthesia (spinal or epidural) for caesarean section was lower compared with those who had general anaesthesia. Similarly, women who received regional anaesthesia had less estimated blood loss compared with those who received general anaesthesia.

None of the included studies reported on wound infection or any other infection related to caesarean section operation.

Even though there was no difference in women's satisfaction level with the type of anaesthesia they received, more women said they would prefer to receive general anaesthesia for their next caesarean section operation.

Nausea and vomiting were found to be more common in women who received regional anaesthesia compared with those who received general anaesthesia, but shivering was more common in the latter group.

There was no difference in the overall effect on neonatal umbilical arterial or venous pH, need for oxygen resuscitation and neonatal adaptive scores at 2–4 hours between women who received general or regional anaesthesia. In terms of mean Apgar score, the trend favoured the epidural group at one minute, but no significant difference was noted between the groups at five minutes. In a subgroup of babies with birth asphyxia, no difference in Apgar scores was found between the two groups.
2. RELEVANCE TO UNDER-RESOURCED SETTINGS

2.1. Magnitude of the problem

On average around 15% of births worldwide occur by caesarean section. The highest rate (29.2%) is seen in Latin America and the Caribbean the lowest (3.5%) in Africa. Overall, in developed countries, the proportion of caesarean births is 21.1%.

Since caesarean section affects a significant proportion of women during childbirth it is pertinent to address the choice between the two options in under-resourced environments. This is especially relevant where both approaches are available but there may be a lack of access to technologically advanced adult and neonatal resuscitating facilities.

2.2. Applicability of the results

The trials included in the review were conducted in a mix of developed and developing countries. There is no known reason to expect that the results might have been different if all studies had been conducted in under-resourced settings. Hence, the findings of the review are applicable to under-resourced settings. However, as mentioned above the availability of related services may play a role in determining applicability.

2.3. Implementation of the intervention

Regional anaesthesia seems to offer some benefit in blood loss. This did not translate into clinical significance as judged from the need to have blood transfusion.

Long-term effects of regional versus general anaesthesia were not addressed in this review. This review suggests that both general and regional anaesthesia could be considered for caesarean section delivery. The choice of the method should be based on the clinical condition of the woman, her informed choice and availability of appropriate equipment and expertise to administer either type of anaesthesia.

In many health-care facilities in the developing world, anaesthetic nurses administer general anaesthesia and regional anaesthesia is usually administered by medical doctors. It is therefore reassuring that outcomes such as maternal and perinatal morbidity and mortality are unaffected by the type of anaesthesia used for caesarean section.

3. RESEARCH

Further trials should be conducted to ascertain the long-term effects of regional and general anaesthesia on mothers and their children delivered by caesarean section.

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References

This document should be cited as: Bamigboye AA. Regional versus general anaesthesia for caesarean section: RHL commentary (last revised: 29 November 2007). *The WHO Reproductive Health Library*; Geneva: World Health Organization.

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