

EDITORIAL

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More studies are needed to convince stakeholders of the value of resuscitating periviable infants

In this issue of *Acta Paediatrica*, Sinclair et al. (1) describe the relationship between the publication of an Australian expert consensus statement on resuscitating preterm infants born before 26 weeks of gestation and their short-term outcomes. The authors found that the statement, which was published in 2006, had minimal impact on the clinical practices of neonatologists in delivery rooms. This is a very interesting study, because infants born before 26 weeks of gestation show a variety of short-term outcomes due to their marginal viability. Many countries have issued guidelines for resuscitating infants born at each gestational week after 22 weeks in order to avoid nonbeneficial interventions. Although the 2006 Australian guidelines recommended that infants born at 22–23 weeks of gestation should not be resuscitated, the resuscitation rate for infants born at 23 weeks of gestation had fallen to 20% in 2005 but had increased to 44% in 2008. So why was this expert consensus statement not appreciated and implemented under clinical conditions in Australia?

IT WILL NOT BE DONE – UNLESS YOU DO IT

As Sinclair et al. state, one reason for these results was that rapid changes in survival rates among periviable preterm infants occurred before and after the statement was published and the statement had not been updated to take account of changes that had already occurred. As a result, clinicians were acting in complete opposition to the guidelines on this point. I have another suggestion about why this happened, as I believe that most of the neonatologists covered by the Australian data based their actions on their own experiences rather than expert opinions. Even though resuscitation is not recommended for periviable infants, simply because of their gestational age, any neonatologists would feel a sense of responsibility to save an infant born with an active heartbeat who was moving immediately after birth. This feeling differs from the opinions of governments, experts and even parents. The biological existence of a preterm infant is the strongest reason. Once a neonatologist has successfully resuscitated and treated a periviable infant, they cannot go back. Experience is more potent than concepts for most neonatologists.

I strongly believe that this is the main reason why the resuscitation rate for infants born at 23 weeks of gestation increased after the Australian guidelines, simply because their outcomes improved during that period, regardless of the national guidelines. More neonatologists were able to



see a greater number of infants discharged alive following active resuscitation and treatment.

In Japan, the same thing happened after the Eugenic Protection Act was amended in 1991 to prohibit induced abortion after 22 weeks of pregnancy. Most deliveries were attended by neonatologists, even at 22 weeks of gestation. Many of those infants born at 22–23 weeks of gestation responded to active resuscitation and were admitted to neonatal intensive care units. Furthermore, some of them survived and were able to be discharged. This experience influenced the behaviour of Japanese neonatologists.

NEED FOR EXPERIENCE

In the early years after the Japanese Act was amended, the mortality rate among infants born at 22 weeks of gestation in Japan was very high. However, it gradually declined (2), as clinicians became more experienced in dealing with these periviable infants. In recent years, the survival rate of infants born at 22 weeks of gestation has gradually improved and it now exceeds 50%. This is not just due to the improved skills of neonatologists, as the development of a regional perinatal system, including a maternal transport system, has contributed to the reduced mortality rate. Only Japanese tertiary centres can afford to provide enough intensive support for these preterm infants. This means that mothers who are likely to deliver at 22–23 weeks of pregnancy must be transferred to appropriate centres before they go into labour.

However, most people are concerned that the increased survival rate among periviable preterm infants will lead to increased sequelae among survivors. To date, the improved survival rate among these infants has not increased the number living with disabilities (3). In other words, a higher number of periviable infants have survived without morbidities.

ACTIVE INITIAL RESUSCITATION, QUICK WITHDRAWAL IF NOT SUCCEEDING

Of course, the real mortality and morbidity rates of these infants cannot currently be estimated, as the long-term burdens on families and society have not been calculated. However, what we do know about the current status of these periviable, preterm infants who have survived obliges all neonatologists to at least start resuscitation, regardless of gestational age, if they have reached 22 weeks of gestation. If an infant does not respond to resuscitation, the recommendations are common that rescue efforts are promptly withdrawn. No one can predict the entire prognosis of an infant immediately after birth. The most feasible plan of action is to resuscitate, evaluate and then decide whether clinicians are not certain. Almost 90% of infants born at 22 weeks of gestation now receive active resuscitation with intratracheal intubation in Japan (4).

As Sinclair et al. (1) stated in their paper, 99% of their subjects died if they did not receive any form of active resuscitation. Guidelines that state that resuscitation should not be started at a specific gestational age cannot be adapted in a timely manner, because the outcomes of these periviable preterm infants are rapidly changing. In addition, randomised clinical trials cannot be performed in a timely fashion. We also need to realise that the gestational age calculated at the start of pregnancy can vary by almost five days. A difference in just one day of gestation could have a great impact on the outcomes of these infants. Again, no one is ever sure of the prognosis of one of these infants in the delivery room.


FUTURE DIRECTIONS

Overall, the outcome of preterm infants born in Australia has been maintained at a high level, as shown by Sinclair et al. (1). Once the resuscitation rate increased, this led to dramatic improvements in the survival rate. However,

discussions on these issues are not limited to the perinatal and neonatal community. There are many stakeholders who need to get involved with establishing real-world neonatology, such as families and relatives, social welfare workers, local and national communities, journalists, and policy-makers. We are all accountable to these stakeholders and that is why neonatologists resuscitate periviable preterm infants based on scientific evidence. That is why international collaboration is required, because data from a single country or region will not be enough to convince all these stakeholders.

CONFLICT OF INTEREST AND FUNDING

None.

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