

utopian situations are not invariable. GA is often not known. Hence, a broad framework based on weight cut-offs (which is reliably obtained in all cases at birth) may be more useful and desirable for guiding decisions initiating resuscitation or continuing life support. Another not so uncommon situation is an unbooked pregnant woman who comes and delivers a periviable extreme preterm who needs immediate resuscitation before an informed consent can be obtained.

4. Translating available literature [2] to operational guidelines in our Indian context, we propose the following algorithm:

- *Ideal situation when GA is known and a timely consent can be obtained:* Obtain informed consent in all cases at the limits of viability before initiating resuscitation as well providing life sustaining intervention.
- *For 22-25 weeks gestation:* obtain informed consent before providing full armamentarium of life-sustaining interventions.
- *When either GA is not precisely known or there may be no time to obtain consent:* (i) Initiate resuscitation in all babies weighing ≥ 500 g (10th centile as per Fenton's chart [3]) and/or born after 22 completed weeks of gestation; (ii) for babies born between 500-600 g, full armamentarium of life-sustaining interventions should be provided till informed consent is obtained; and (iii) provide full armamentarium of life-sustaining interventions in all babies at ≥ 25 weeks' GA and/or ≥ 600 g (10th centile as per Fenton's chart [3]) of birth weight.

5. In Table I in 3rd row, 2nd column; *i.e.* "provide treatment unless provider declines to do so" is probably not justified as ethical principles do not allow the provider to decline treatment particularly when parents prefer to accept treatment.

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AUTHOR'S REPLY

We are happy to receive comments from the readership and respond to them pointwise. For the sake of brevity, we will not elucidate on the queries. We also look forward to more discussion from readers.

1. Our intention in this write-up [1] was to bring this concept into discussion and not discuss practical ethical dilemmas faced, as these will vary with the settings even in geographically localized areas. A sound knowledge of ethics in this area would allow the readers to apply them to their situation. We do not intend to be prescriptive in any way.
2. The article was reviewed twice and it was probably felt that Live Birth and Signs of Life were not required to be defined. We would even now balk at defining 'full life support' and 'comfort care' due to reasons mentioned in the article at the end under "Complexity of the Indian Scenario." Concerning examination of heart rate (HR), in an unpublished study from our center, HR was not assessed in 39% of normal delivery care. However, all resuscitations that required ventilation had HR assessed as per NRP guidelines [2]. This study is an audit of random videos and hence participants were not aware that the video would be analyzed.
3. Weight has a similar fallacy as gestational age. In a neonate requiring resuscitation, weight is often guessed rather than measured before initiating resuscitative measures. Hence, it will always be worthwhile to ensure that we follow guidelines used across the world since gestational age rather than weight correlates with long-term neurodevelopmental outcomes. Even after completion of resuscitation, weight measurement may not be accurate in peripheral centers.
4. We would not agree to many points provided in the proposed algorithm. We need to decide which methods of gestational age assessment are to be relied upon. We have already shown our hesitation to use weight as a deciding criteria. As we have suggested, instead of few experts putting forth a recommendation, it is necessary to have a consultation process probably over a period of 6 months to one year among all stakeholders (including nurses, hospital administrators, ethicists, lawyers, parent groups, *etc.*), and following standard guideline development

processes. A recommendation that comes out of a broader consultation is likely to be accepted.

5. In cases when there is no therapy that can benefit an infant (anencephaly/certain severe cardiac deformities/ non-viable GA), a decision by care providers not to try predictably futile endeavors is ethically and legally justifiable. As such therapies do not help the child, are sometimes painful for the infant (and probably distressing to the parents), and offer no reasonable probability of saving life for a substantial period. Ethical principle applied here is beneficence and non-maleficence.

The table was proposed by President's commission 1983 [3]. It mentions that sometimes parents may want to consider treatment when its believed futile by physicians. As long as this choice does not cause substantial suffering for the child, providers should

accept it; although, individual health care professionals who find it personally offensive to engage in futile treatment may decline the treatment and arrange to withdraw from the case.

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Are we Missing Neonatal Dengue?

Early recognition of dengue illness in neonates due to perinatal transmission deserves special attention as it can be missed [1]. Onset of fever in the newborn varies from 1 to 11 days after birth with an average of 4 days and lasts 1-5 days. Falsely-negative dengue serology on first two days of life may be due to low viremia at that time [2]. The duration of viremia and febrile phase lasts longer in newborns experiencing primary infection due to more gradual antibody or cellular response.

We recently managed two neonates who were asymptomatic at birth but after one week, they developed signs and symptoms of severe dengue infection; one of them developed severe thrombocytopenia and encephalopathy. Both these neonates were negative for dengue infection by routine screening at birth and were missed. Hence, screening for NS1 antigen at birth in newborns of mothers with dengue illness may not be sufficient. Non-structural antigen (NS1) can become positive even up to 7 days after birth peaking at the 5th day [3]. IgM and IgG antibodies can take 2-3 weeks to be positive. Dengue virus illness hence, can be easily missed in the early newborn period if we do not follow-up closely.

One should carefully observe the baby born to a mother with dengue infection for a minimum period of two weeks after birth with periodic checks, and screen again for Dengue serology at 2 weeks of age. This strategy can help in diagnosis of this potentially devastating illness, and will contribute to early appropriate management and significant reduction of neonatal morbidity and mortality [4,5].

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