Editorial

Snappe II as a Useful Score to Evaluate Mortality among Newborns

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EDITORIAL

The Score for Neonatal Acute Physiology (SNAP) was developed in 1993 for all newborns and validated as a predictor of mortality and morbidity, based on physiological data using 34 items obtained through clinical and laboratorial evaluations. As a first-generation disease severity score in infants, SNAP was difficult to apply due to the number and complexity of items [1].

As a result, SNAP II (the second generation of SNAP) has emerged as a simpler metric that is empirically weighted, reflecting the real risk of mortality. The new score was re-calibrated by updating mortality risk estimates to reflect the experience gained in the early 1990s [1].

Three powerful risks of perinatal mortality (birth weight, small for gestational age and Apgar 5), which are independent of physiological disorders, were combined to the six original SNAP items to generate the "Perinatal Extension" SNAP-II (SNAPPE II). This revised score represents the physiological and combined risks of perinatal mortality [1,2].

Dammam et al., 2009 [3], defined a SNAPPE II score greater than 30 as "high", thereby identifying a 28% risk of death in the studied samples. Newborns with a SNAPPE II score greater than 45 were approximately 7-fold more likely to die compared with patients with lower SNAPPE II value.

Other studies that evaluated SNAPPE II score as a predictor of mortality have been conducted in different countries. Most studies found that SNAPPE II is a useful tool to predict mortality in neonates, irrespective of gestational age [4-9]. However, none of them have been conducted in Brazil.

It is scientifically relevant to evaluate the performance of the new score in developing areas where disparities, ethnic diversity, and socio-economic vulnerability are present. We developed a study with 209 newborns in a neonatal intensive care unit (JCI accredited in 2012) in Itapecirica da Serra, SP, Brazil. In this municipality, the infant mortality rate was 10,4/1000 live births, unemployment was greater than 50%, and appropriate basic sanitation was 50% in 2016 [10].

Our study aimed to identify a cut-off point considered "high risk" for mortality based on the SNAPPE II score. The data were compared with the results presented by Richardson et al., 2001 [1], who assessed 755 deaths from a study of 25,280 newborns (2.98%).

Considering a score greater than 30 as "high" as Dammam et al., 2009 [3] identified in their study, our findings were consistent with the ones reported by Richardson et al., 2001 [1]: 76.9 % of those who had a fatal outcome had a score greater than 30, whereas 75.7% of those who died had a score greater than 30 in Richard's sample.

In our study, a high SNAPPE II score (> 30) was observed in 76.9% of those who had a fatal outcome. This finding indicates that the score was a good predictor of mortality in the newborn population. Moreover, an individual assessment of the variables of the SNAPPE II score revealed a highly significant correlation between hypothermia and low birth weight and an increase in this score, which subsequently correlates with an increased risk of dying (data not published).

SNAPPE II performance was similar despite of the apparent socio-economic and ethnic difference among population, suggesting the external validity for the score in developing and economic vulnerable geographic areas.

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