Trends of the management of acute meningococcal septicaemia in Al-Nasser Paediatric Hospital, Gaza, Palestine

Nabil M.A Al Barqouni*, Awni Al Shorafa, Belal Dabour, Loai N Albarqouni

ABSTRACT

Backgrounds: Infection with Neisseria meningitides can produce a variety of clinical manifestations. Mortality and long-term morbidity can be very high in patients with invasive meningococcal disease if the infection is not treated appropriately. Our main objective was to evaluate mortality of all children admitted with acute meningococcal septicaemia (AMS).

Methods: We conducted a retrospective study of all paediatric-cases of acute meningococcal septicaemia admitted to Al-Nasser Paediatric Hospital, the largest paediatric hospital in Gaza Strip, between January-2009 and September-2015. All AMS cases were diagnosed based on the clinical presentation, skin smear and blood culture. Outcome measures were predicted mortality using Paediatric Risk of Mortality score III (PRISM III), actual mortality and standardised mortality ratio.

Results: A total of 240 children were admitted with proven AMS. Aged range from 1-month to 12-years, and 113 of them (47%) were male. The number of admitted children with AMS was decreased from 47–59 cases/year in the 2009–2011 period to 21–22 cases/year in the 2012-2015 period. The total mortality predicted by PRISM III was 25.56%, however the actual overall mortality was 49 children (20.8%): 16(48.5%) aged less than-a-year, 17(22.1%) 1–3 year-old, 9(18.8%) 3–5 year-old and 7(8.5%) 5–12 year-old (p value = 0.00299). Standardised mortality ratio was 0.814. Forty-one children (82%) were died within the first 24-hours of admission. Sixty-nine (28.8%) children received corticosteroid, 85(35.4%) received inotropic medications and 46(19.2%) required mechanical ventilation for a median of 24-hours. In 75(31.3%) children, AMS was associated with meningitis. Multi-organ failure (n = 22, 9.2%) was the most common complication, followed by skin necrosis (n = 13, 5.4%), convulsions (n = 13, 5.4%), and disseminated intravascular coagulopathy (n = 10, 4.2%).

Interpretation: The mortality rate of the disease still high, however, this can be explained by the high predicted score of mortality, which reflect the severity of admitted cases. The mortality was significantly associated with younger age-group. New model of treatment (e.g. plasmapheresis) may be useful in decreasing mortality.

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