Neonatal Surgery: Experience of 172 Cases in National Taiwan University Hospital

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Neonatal surgery is defined as surgical interventions in newborns within one month of age. It consists of a wide variety of diseases. The diseases are mainly congenital anomalies. In the past 5 years in National Taiwan University Hospital, a total of 172 newborns received operations (cardiovascular, orthopedical, neurological operations and minor surgeries were excluded) in the pediatric surgical division. The male to female ratio was 2:1 (114:58). The average age at operation was 7.9 ± 8.1 days old. There were eighteen mortalities with the mortality rate being 10.4%. We found that the significant poor prognostic factors included associated chromosomal disorder, combined congenital anomalies, low body weight during operation, high pre-operative partial thromboplastin time ratio, and an operation time beyond 100 minutes.

Key words: neonatal surgery, prognostic factors

Materials and Methods

We reviewed 172 cases that received surgery within 1 month of age at the pediatric surgical division, NTUH, between July 1996 and June 2001. Cardiovascular, orthopedical, neurological disorders and minor surgeries were excluded. By charts reviewed retrospectively, we collected various clinical data including gestational age, age at operation, birth weight, body weight during operation, operation time, and lowest intra-operative body temperature. Also, the laboratory data including pre-operative and post-operative hemoglobin (Hb), platelets count, prothrombin time (PT) and partial thromboplastin time (PTT). The statistical results between the survivors and non-survivors were compared by Chi-square if measures were nominal, or Mann-Whitney tests (univariate) and Logistic regression (multivariants) if they were numerical. Fisher exact test was used when the case number was below five. The statistic software program was STATA®. Results were considered significant when p<0.05.

Results

In the total of 172 cases collected, the average age at operation was 7.9±8.1 days old. The male to female ratio was 2:1 (114:58). The most common diseases were an abdominal wall defect or an imperforate anus, each of them accounting for 15% of the total diseases. The other common diseases included intestinal atresia (12%), diaphragmatic hernia (11%) and necrotizing enterocolitis (NEC) with intestinal perforation (10%) as shown in Fig 1.