早產新生兒出生四十八小時內不同營養模式之成效探討

Outcome Evaluation of Different Modes of Nutrition Supply within the First forty-eight Hours in Preterm Neonates

中文摘要

本研究始於協力醫院與研究醫院對早產新生兒有不同營養照顧的模式，引起許多爭議，因此決定經由回溯性研究探討不同營養模式之成效，研究方法採取個案對照比較評估方式，分析其照顧結果與併發症發生的差異。

自 1997 年 1 月 1 日至 1999 年 7 月 31 日連續收集了出生體重小於 2000 克的早產新生兒進行，(一)、早期給予營養與延遲給予營養的分析：早期給予營養組的營養照顧模式爲出生 48 小時內給予周邊含氨基酸靜脈營養及少量低卡路里腸道營養餵食，延遲給予營養組的營養照顧模式爲出生 48 小時以上延遲給予靜脈及腸道營養。 (二)、有給予周邊含氨基酸靜脈營養與沒有給予靜脈營養的分析：兩組於出生 48 小時內給予少量低卡路里腸道營養餵食，前一項分析的早期給予營養組與沒有給予靜脈營養組的比較。

結果包括：(一)、早期給予營養(n= 9)與延遲給予營養(n= 6)的分析：兩組於妊娠週數、出生體重及出生時主要診斷沒有有意義的差別。 但是，兩組於達到完全腸道營養餵食天數(12.4±6.0 天 vs.22.6±6.6 天，$p < 0.01$)、24 小時內連續 12 小時完全禁食的天數(0.7±0.5 天 vs.5.2±4.3 天，$p < 0.05$)、及體重下降的最大百分比的天數(4.8±1.6 天 vs.7.5±2.2 天，$p < 0.05$)等達到統計上有意義的差別。 早期給予營養組於靜脈營養使用天數、間歇性機械換氣呼吸器使用天數、達到出生體重天數、體重下降的最大百分比及住院日數等指標，雖然沒有統計上的差別，但有較佳的結果。 顯示早期給予營養組比延遲給予營養組較快達到能量的正平衡。

(二)、給予營養靜脈營養(n= 9)與沒有給予靜脈營養(n= 15)的分析：在體重下降最大百分比天數(4.8±1.6 天 vs.6.6±2.1 天，$p < 0.05$)，達到統計上有意義的差別，另外體重的下降時間也沒有延後情形。雖然， 早期給予周邊含氨基酸靜脈營養之妊娠週數(31.2±1.9 週 vs.32.5±0.8 週，$p < 0.05$)較短，出生體重(1428±267 克 vs.1710±229 克，$p < 0.05$)較輕，及出生時主要診斷也較嚴重；但其達到完全腸道營養餵食天數、24 小時連續 12 小時完全禁食的天數、達到出生體重天數及出生後第 10 天體重增加速率等指標，卻沒有達到統計上有意義的差別。由此，顯示早期給予周邊含氨基酸靜脈營養能幫助早產新生兒儘快達到能量正平衡。

本研究顯示早期給予周邊含氨基酸靜脈營養及少量低卡路里腸道營養餵食，可以幫助早產新生兒儘快達到完全腸道營養餵食，使新生兒較快達到氮素與能量的正平衡，縮短出生後的體重下降時間，儘快恢復出生的體重。

英文摘要

In this retrospective study, we evaluated outcomes of different modes of nutrition supplementation in preterm neonates.

Clinical outcomes of 9 infants in the early nutrition (EN) group, whom were given early peripheral parenteral amino acids and minimal hypocaloric enteral feeding

within the first 48 hours, were compared with that of 6 infants in the delayed nutrition (DN) group, whom were given nutrition 48 hours after birth. The two groups were similar with respect to gestational age, birth weight, and perinatal diagnosis. In EN group, the days of reaching full enteral feeding were shorter than that in DN group (12.4 ± 6.0 days vs. 22.6 ± 6.6 days, $p < 0.01$). The days of nothing by mouth (NPO) in EN and DN infants were 0.7 ± 0.5 days and 5.2 ± 4.3 days, respectively ($p < 0.05$). The age of maximal weight loss of EN and DN infants were 4.8 ± 1.6 days and 7.5 ± 2.2 days, respectively ($p < 0.05$). Even though the duration of parenteral nutrition, the time used assisted ventilation, birth weight regain, the percentage of maximal weight loss, weight gain after day 10 and length of hospitalization did not show statistical significance between the two groups, there is a trend forward better outcome in the EN group. Therefore, early peripheral parenteral amino acids in combination with minimal hypocaloric enteral feeding can facilitate early positive energy balance.

The same 9 infants in the EN group were also compared with other 15 infants, whom did not receive parenteral nutrition (NPN). The two groups were both given enteral feeding within the first 48 hours. Average gestation age of the EN group was statistically less than that of NPN group. (31.2 ± 1.9 weeks vs. 32.5 ± 0.8 weeks, $p < 0.05$) Average birth weight of EN group was lower than that of NPN group. (1428 ± 267 g vs. 1710 ± 229 g, $p < 0.05$) The severity of perinatal diagnosis of EN group was more advanced than that of NPN group. There were no significant differences in the age of reaching full enteral feeding, the days of NPO, and the age of birth weight regain. The age of maximal weight loss in the EN and NPN group were 4.8 ± 1.6 days and 6.6 ± 2.1 days, respectively ($p < 0.05$). Therefore, early peripheral parenteral amino acids can shorter the period of weight loss after birth.

This study demonstrated several beneficial effects of early peripheral parenteral amino acids in combination with minimal hypocaloric enteral feeding. This mode of nutrition supplementation can facilitate full enteral feeding sooner, achieve of positive nitrogen and energy balance ealier, and fasten birth weight regain.