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STANDARDIZED VERSUS INDIVIDUALIZED PARENTERAL NUTRITION IN VERY-LOW-BIRTH-WEIGHT INFANTS: A COMPARATIVE STUDY

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Background: Parenteral nutrition (PN) improves growth and outcome of very-low-birth-weight (VLBW) infants. Optimal PN composition, standard (STD-PN) or individualized (IND-PN), is still controversial.

Aim: To compare IND-PN and STD-PN as to nutritional and growth parameters, complications and cost.

Patients and methods: 140 VLBW infants were studied. Each of the 70 neonates from the IND-PN group was matched with a neonate of similar gestational age (GA) (\pm 4 days) on STD-PN. Data collection included demographic, maternal, intrapartum, neonatal, interventional, growth and nutritional data.

Results: Compared to STD-PN infants, IND-PN infants had a significantly lower mean birth weight, greater need for resuscitation at birth and interventions thereafter. Nevertheless, IND-PN infants showed significantly greater weight-gain SDS during the 1st week ($p=0.036$) and the 1st month of life ($p=0.0004$), and higher discharge-weight SDS ($p=0.012$) and head-circumference SDS ($p=0.006$). IND-PN infants received higher mean daily caloric intakes. They also had significantly shorter durations of exclusive PN and needed less electrolyte corrections.

Conclusions: Compared to STD-PN infants, IND-PN infants achieved significantly better growth without added clinical or laboratory complications, had shorter period of exclusive PN and less electrolyte corrections. IND-PN, in accordance with the current more aggressive nutritional approach, appears optimal for PN of VLBW infants. Yet, STD-PN with adequate composition is an appropriate alternative.

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SURVEY OF INTRAVENOUS(IV) FLUID MANAGEMENT ON THE NEONATAL UNITS IN THE UNITED KINGDOM(UK)

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Aims and methodology: Questionnaires were emailed to the neonatologists across the UK. The questions included the volumes of IV fluids administered in term and preterm babies, any variations made for extreme preterm babies, babies receiving phototherapy, and at risk of hypoxic ischemic encephalopathy(HIE).

Results: Valid responses were obtained from 111 neonatal units. The volumes of IV fluids administered are tabulated.

Mean IV fluids	Mean volume in ml/kg/day	DAY 1 (ml/kg/day)	DAY 2 (ml/kg/day)	DAY 3 (ml/kg/day)	DAY 4 (ml/kg/day)	DAY 5 (ml/kg/day)
Level 1 neonatal units (n=18)	Term babies	58.6	84.7	110.3	136.5	146.1
	Preterm babies	65.3	93.5	121.2	144.4	152
Level 2(n=57)	Term babies	58.9	85.7	112.6	139	148.3
	Preterm babies	68	95.1	121.7	144.9	151.8
Level 3(n=36)	Term babies	62.2	85.7	109.7	134.4	145.7
	Preterm babies	76.9	100.7	125.2	142.7	149.6

[Term and preterm babies]

Number of units (%)	Extra fluids for babies less than 1kg	Extra fluids for babies on phototherapy	Restricting fluids for babies at risk of HIE
Level 1 neonatal units	6/18 (33.3%)	11/18 (61.1%)	15/18 (83.3%)
Level 2 neonatal units	25/57 (43.8%)	25/57 (43.8%)	54/57 (94.7%)
Level 3 neonatal units	17/36 (47.2%)	7/36 (19.4%)	29/36 (80.5%)

[Additional questions]