

NICU Intravenous Fluids - Full Clinical Guideline – Joint Derby & Burton

Reference no.: NIC FF01/ Feb 22/v004

1. Introduction

Fluid requirement should be assessed on an individual basis. Intravenous fluids should be started at 60 ml/kg/day (40mls/kg/day for HIE) and then in general assess fluid balance at least daily (at least twice daily for infants < 1000g). The other factors that should also be taken into account are urine output, fluid balance and serum creatinine including trends in changes in weight and serum sodium as well as actual values on any particular day.

Which weight to use:

The birth weight should be used in the calculation of fluid balance; until this has been regained (around day 10) when subsequently the highest weight is used unless there has been oedema and fluid overload. In the case of severe hydrops or water overload, an estimated weight may have to be used (50th centile for corrected gestational age).

Daily weight:

Weight is the most adequate way of assessing water balance over the first few days, especially in the very preterm infant who is experiencing transcutaneous water losses. Daily weights therefore provide a guide to the adequacy of fluid replacement and should therefore be done in all but the most unstable babies receiving intensive care.

Other infusions:

Arterial fluid solutions and many infused drugs contribute to the volume and may also contain sodium and chloride and should be considered in all fluid calculations. Drugs and fluids should always be counted in the assessment of fluid input.

IV Fluids:

For babies <1000g or <29 weeks gestation:

Day 1 60 ml/kg/24 hrs
Day 2 90 ml/kg/24 hrs
Day 3 120 ml/kg/24 hrs

For babies >1000g or >29 weeks gestation:

Day 1 60 ml/kg/24 hrs
Day 2 80 ml/kg/24 hrs
Day 3 90 ml/kg/24 hrs
Day 4 110 ml/kg/24 hrs
Day 5 120 ml/kg/24 hrs

N.B. IV fluids – do not usually exceed 120 ml/kg/24 hrs of plain IV fluids or PN, though this may be increased up to 180ml/kg/24 hrs after discussion with a senior clinician.

If babies tolerate 150 mls/kg/24 hrs of breast milk then it can be increased up to 180mls/kg/day +/- breast milk fortifier (see feeding guidelines).

Usual Regime

In all babies start milk feeds as soon as possible. However, IV fluids may be required:

Sick babies: Day 1 - 10% Glucose/starter pack TPN

Day 2/3 - 10% Glucose / 0.18% sodium chloride. If already on starter PN, then bespoke PN may be continued in liaison with pharmacy. Please see the “TPN in Neonates” guideline for further information.

Sick babies need daily assessment of fluid requirements by:

- Clinical examination
- Daily weight
- Regular U & E's and urinary sodium
- Urine output (usually 1-4ml/kg/hour)

May need extra fluids/calories

- Small for dates and extremely low birth weight
- Babies under phototherapy
- Glycosuria

May need less fluid

- Persistent ductus arteriosus
- Inappropriate ADH secretions
- Renal impairment

Watch out for signs of dehydration

- Tachycardia
- Increased skin turgor
- Hypotension
- Decreased urine output

Consider fluid bolus or increasing the total fluids (1 day ahead).

2. References (including any links to NICE Guidance etc.)

3. Documentation Controls

Reference Number From Library and Knowledge Service Manager	Version: v004		Status Final	
Version / Amendment History	Version	Date	Author	Reason
	V004	Feb 2022	Dr Sunil Francis (Paediatric ST4), Dr Bala Subramaniam	Guideline required updating to make joint
Intended Recipients: All medical and nursing staff working on the neonatal unit in Derby and Burton				
Training and Dissemination: Guideline will be uploaded to KOHA and be available on the intranet at both sites, and available through the KOHA website on the internet. Any specific training will be given at individual sites as necessary, but this guideline has minimal changes which reflect current practice.				
Development of Guideline: Dr Bala Subramaniam Job Title: Neonatal Consultant				
Consultation with: Neonatal consultants, nurses and pharmacists at both Derby and Burton hospitals				
Linked Documents: TPN in neonates guideline (WC/NP – NICU). Enteral feeding of preterm and growth restricted infants (NIC FF12). Feeding regime on NNU (term, preterm and VLBW/IUGR infants) (WC/NP/51N – NICU)				
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