



PAEDIATRIC ACUTE CARE GUIDELINE

Nephrotic Syndrome

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

This document should be read in conjunction with this DISCLAIMER
<http://kidshealthwa.com/about/disclaimer/>

Nephrotic Syndrome

Background

Nephrotic Syndrome is characterised by:

- Oedema (patients generally present with this complaint)
- Significant proteinuria (> 3+) on dipsticks or urine protein:creatinine ratio >200 mg/mmol)
- Hypoalbuminaemia (<25g/L)
- Hypercholesterolaemia

The majority (> 80%) respond to steroid treatment and are assumed to have minimal change in histology, with a good long term prognosis (though relapses are common)

Assessment

Clinical considerations:

- There is often a history of weight gain and reduced urine output
- Upper respiratory tract infection or diarrhoea may be precipitating causes
- Look for peri-orbital, scrotal or labial oedema as well as peripheral oedema of the limbs and sacrum

Investigations

- Urinalysis
- Urine - MC+S

- UEC, LFT, Cholesterol
- Streptococcal serology, complement levels (C3, C4) and ANF
- Blood cultures if febrile or septic

Management

- **Steroids:** A number of regimens are advocated. These usually begin with prednisolone given daily or in divided doses at 60 mg/m² (max. 80mg/day) of body surface area at least until remission (typically 1-2 weeks) calculated on ideal weight for height. (BSA formula is on PMH growth charts).
 - The starting dose usually approximates 2mg/kg/day (based on estimated non-oedematous weight)
- **Antibiotic prophylaxis** (oral Cephalexin, penicillin or IV equivalents) while oedematous and taking daily steroids is generally recommended
- **Consider hospital admission** for first attack, and in complicated relapses (e.g. gross oedema, hypertension, hypovolaemia, infection)
- **Strict fluid balance**
- **Daily weights**
- **Daily urinalysis** and/or urine protein:creatinine ratio
- **No added salt** (but otherwise normal) diet without fluid restriction (at least initially)
- **IV albumin** is indicated for **hypovolaemia** as evidenced by:
 - Anuria
 - Hypotension
 - Poor perfusion with skin mottling or poor capillary return, often with abdominal pain
 - A urinary sodium of < 10 mmol/l is a useful investigation to confirm hypovolaemia
 - A low serum albumin alone is not an indication for intravenous albumin
- **Give albumin only after discussion with the ED or Inpatient Consultant**

Evidence of Hypovolaemia

- Give 1 g/kg 20% albumin (5ml/kg) over 4-6 hours
- Provided perfusion improves, give 1-2mg/kg of **IV Furosemide** mid-infusion
- Beware of hypertension and pulmonary oedema

If clinically Shocked


- Consider 10ml/kg 4.5% albumin
- Gross genital oedema may also be an indication, but infrequently in the ED setting
- **Furosemide** 1-2 mg/kg IV should be considered mid infusion

References

External Review: Frank Willis (Consultant - Department of Nephrology): July 2015

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with a disability.

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