Government of Western Australia
WA Country Health Service

Kimberley Population Health Unit

ACUTE POST-STREPTOCOCCAL GLOMERULONEPHRITIS

KIMBERLEY CONTROL MEASURES 2014

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Acute post-streptococcal glomerulonephritis (APSGN) is occasionally seen among the aboriginal population in northern Australia. It most commonly affects children but can occur at any age. It has been more common in NT than the Kimberley previously. APSGN is an important condition for four main reasons:-

- Children acutely ill with APSGN are often hypertensive and they may develop hypertensive encephalopathy. They can also develop acute renal failure. Outcomes may be worse in adults.

- There is increasing evidence that APSGN in early childhood leaves a legacy of compromised renal function which in turn increases the risk of chronic renal failure.

- On occasion, outbreaks of APSGN occur in Aboriginal communities. These outbreaks are usually caused by specific strains of group A streptococci, which can spread very quickly resulting in many cases of APSGN particularly among children.

- Outbreaks can be halted by treating all children in the community with any evidence of skin sores, with IM penicillin.

APSGN CASE DEFINITION

A **clinical case** of APSGN has at least 2 of the following:

- facial oedema and / or peripheral oedema
- hypertension **(see Appendix 1)**
- ≥ moderate haematuria on dipstick(≥2+ red blood cells)

Any questions or concerns regarding diagnosis or immediate management of APSGN, the on–call Paediatrician should be contacted at Broome Hospital on tel 08 91942222.

Laboratory evidence is also required. Hence the following tests must be performed:

1. Haematuria on microscopy (RBC >10/µl) **(if microscopy is not available, then 'moderate' haematuria on dipstick fulfils this criterion)**

AND
2. Evidence of recent streptococcal infection (positive Group A Streptococcal culture from skin or throat, or elevated ASO titre or Anti-DNase B)

AND
3. Reduced C3 complement level

To further classify a clinical case KPHU uses the following definitions

Confirmed case

A confirmed case requires both clinical evidence **AND** laboratory evidence**.**

Probable case

A probable case requires clinical evidence only.

Possible case

A possible case requires laboratory evidence only.

Notes
1. Possible (subclinical cases) can be found when screening individuals who have been contacts of a case of APGN. Subclinical cases have only one clinical symptom. They do not have oedema or hypertension but, on laboratory investigation, are found to have haematuria, evidence of a streptococcal infection and a reduced C3. These cases should be reported to the regional Paediatrician.
2. If microscopy is not available, then moderate haematuria on dipstick fulfils this criterion.
3. If all other criteria have been fulfilled but the only evidence of recent streptococcal infection is isolation of Group C or Group G Streptococci from skin or throat, this could be considered a confirmed case after discussion with KPHU in conjunction with the Regional paediatrician.

THE ROLE OF THE CLINICIAN IN APSGN

- In patients presenting with oedema, haematuria and/or hypertension that is clinically compatible with a provisional diagnosis of APSGN, you must inspect their skin for evidence of skin sores or scabies

- If skin sores are present in a patient with this provisional diagnosis, swabs should be taken from 2 different skin sores if present; otherwise a throat swab should be taken, if indicated on history, for identification of GAS.

- Blood collected to measure ASOT, antiDNAase B titres and C3, C4, UEC

- PathWest can perform a urine red cell count if specimens reach them within 24 hours of collection without the need for a preservative. Clearly indicate the provisional diagnosis of APSGN on your pathology ordering form. If the patient is more remote perform a dipstick urinalysis. Do not send a urine specimen but note this in the handover information if the patient is transferred to hospital.

- All clinical cases of APSGN should be given IM benzathine penicillin regardless of whether skin sores/pharyngitis are present at the time of presentation or not **(See Appendix 2 for dosages and alternative regimes in the presence of penicillin allergy or LA bicillin refusal).**

- **Clinical management of all cases should be discussed with the regional paediatrician or on-call paediatrician. All clinical cases of APSGN with hypertension or oedema should be hospitalised.**

- Names of family, household and close contacts of the suspected case including adults and children who have been staying in the household 2 weeks prior to the onset of APSGN should be collected ASAP. This is essential to assist with prompt contact tracing if the case is confirmed **(See Appendix 3).**

- All cases should be medically reviewed no later than 6-8 weeks after discharge. The discharge summary from the hospital will convey this information. Upon return to primary health care, the patient should be seen twice weekly for BP measurement, weight, dipstick urinary monitoring and physical examination until paediatrician or senior doctor review at 6-8 weeks. For this medical follow-up, please collect urine for microscopy if you are within 24 hours of laboratory processing (or urinary dipstick if not) and blood for complement (C3 & C4) levels.

- Please report all cases of APSGN to the Kimberley Population Health Unit Telephone 9194 1647 or email KHR_CommunicableDisease@health.wa.gov.au

- All clinicians should raise community awareness of scabies control and skin sores, promoting regular washing especially of children to reduce bacterial spread. These are core elements of community health promotion – please be additionally vigilant if there is a probable or suspected case of APSGN in your community. Remember to include environmental health and health promotion teams' members to strengthen community action in these circumstances. Health promotion resources are available from KAMS Limited and KPHU Health Promotion teams.

THE ROLE OF PRIMARY HEALTH CARE IN CONTACT IDENTIFICATION AND TRACING

Single cases and contact identification/tracing/management

Single ('sporadic') cases may or may not signal the beginning of an outbreak.

Single cases should be admitted and treated clinically, including any infected skin sores.

Every single case of APSGN requires notification, contact identification and contact tracing.

Those staying in the house in the two weeks preceding the onset of APSGN in a case are defined as *'family, household and close contacts'*.

All of these *'family, household and close contacts'* should be identified irrespective of age (in other words, children AND adults) in the earliest possible timeframe. Consent should be obtained for

- skin to be examined for skin sores/scabies,
- blood pressure to be measured
- urine to be tested with a dipstick for the presence of haematuria.
- If skin sores are present, swabs to be taken for sensitivity and culture **(See Appendix 3)**

The clinical assessment and treatment of all household contacts must be completed.

Any child aged **12 months to 16 years** (exclude babies under 12 months) among *'family, household and close contacts'* are to be given LA Bicillin **whether skin sores are present or not.**

The local GP/DMO is responsible for prescribing treatment for household contacts.

For those *'family, household and close contacts'* **17 years or older**, only those who have infected skin sores are given LA Bicillin **(See Appendix 2).**

All individuals identified with scabies should be treated with 5% permethrin as should their contacts. Consider Ivermectin if >15kg for heavy or recurrent infestations

Any contact that fulfils the clinical case definition i.e. TWO of the following clinical signs should be discussed with the regional paediatrician immediately regarding any additional clinical information or tests to be performed locally and arrangements for paediatric assessment.

- facial oedema and / or peripheral oedema
- hypertension (**see Appendix 1 for age related blood pressure recordings in children)**
- ≥ moderate haematuria on dipstick

Any contact that has only ONE of these three clinical signs is to be referred for medical assessment by the local medical officer.

Urine specimens for urine red cell count are only to be ordered if the urine will be received by Path West within 24 hours of collection. No preservative is required in the specimen jar. If the specimen will take more than 24 hours to be transported to the laboratory, it is not to be ordered.

Remember to reinforce community awareness and vigilance in treating skin sores among children. Contact KPHU or KAMS Limited's health promotion teams for current and culturally appropriate health promotion pamphlets and posters promoting skin health and skin sore management.

Cases Occurring in Day Care Centres

Advice should be sought from KPHU for the management of cases occurring in Day Care Centres. If a case of APSGN has occurred in a child attending day care the parents/caregivers and day care staff should be informed that a case of APSGN has occurred in a child attending day care. Centre staff and parents/caregivers of children in that child's care group should be alerted to the signs of APSGN and provided information on skin sores and skin hygiene. It is not necessary to screen other children attending that day care. KPHU will advise if further action is required.

Environmental Health Referrals

Environmental Health Teams (including Environmental Health Officers) operate throughout Kimberley communities and have many responsibilities including environmental health risk assessment and mitigation. Local Environmental Health Teams have agreed to receive referrals with patient consent from clinicians. The Environmental Health Referrals will include practitioners working one on one with patients and householders to identify measures to control health risks within the immediate environment. The focus is case specific, but will usually include information and education on communicable disease prevention with a risk assessment of the house and living environment, and support to access repairs and maintenance when required.

Note: EHO's are Authorised, or eligible to be Authorised under the Health Act and have existing responsibilities for the investigation of notifiable communicable and zoonotic disease outbreaks, including environmental health risk assessment and mitigation.

PUBLIC HEALTH RESPONSES CO-ORDINATED THROUGH KPHU

Public Health Alert

Whenever there are TWO OR MORE APSGN cases - whether probable or confirmed – in the Kimberley within a 2 month period, KPHU will issue a Kimberley-wide alert to all medical officers and communities to raise awareness for diagnosing and reporting cases. Educational messages for communities will be coordinated by KPHU through Environmental Health and Health Promotion teams.

KPHU will also convene a Task Force with a designated Public Health Response Lead.

Criteria for invoking population-based community screening

The purpose of population-based screening is to identify people with risk factors for APSGN and reduce the likelihood of transmission of GAS in an exposed community. A secondary aim is to identify people with unrecognised or probable APSGN.

A decision to invoke population-based screening is serious. This decision can only be made by the KPHU Task Force.

Criteria for Community Screening

Two cases probable or confirmed, living in the same community and;

- Onset within a week of each other
- The cases are not contacts of each other
- At least one of these cases must have documentation of a low C3 complement.

OR

1 confirmed case and 2 probable cases living in the same community and:

- Onset within 1 month of each other
- None are contacts of each other

NOTE: Only the APSGN Task Force is authorized to instigate community screening. Community screening in the absence of authorization by the APSGN Task Force is discouraged.

When a community has been identified by the APSGN Task Force as eligible for 'population-based community screening', KPHU will make a public announcement to local providers, their line managers and employing organisations; mobilise 'surge capacity' and available resources and work closely with primary health care providers on the ground whether WACHS-K, KAMSC and ACCHOs or RFDS. KPHU will assist primary health care providers to engage community leaders to seek permission for 'population-based community screening'. Written consent from parents/carers must be obtained prior to screening occurring in the community school (a sample consent form can be found in **Appendix 6**)

Population-based community screening for APSGN and its risk factors requires physical examination of all children in the community aged 12 months to 16 years for oedema, skin sores and scabies.

Community screening does not require BP measurement or urinalysis unless the child has oedema. Specific protocols for those children found to have oedema, skin sores or scabies will be issued by KPHU to standardise pathology tests and treatments. The medical officer to be responsible for prescribing treatment for those identified through community screening at this time will also be specified.

Population-based community screening requires systematic documentation **(see Appendix 4)**. Community notices about community screening as well as additional resources for raising community awareness of APSGN will be issued through KPHU.

Kimberley Population Health Unit
APSGN Task Force
Disease Control Team 9194 1647
KHR_CommunicableDisease@health.wa.gov.au

November 2014

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Appendix 1

Measuring blood pressure in children

95th Centile for Systolic Blood Pressure by Age*		
Age (y)	**Boys**	**Girls**
1	103	104
2	106	105
3	109	107
4	111	108
5	112	110
6	114	111
7	115	113
8	116	115
9	118	117
10	119	119
11	121	121
12	123	123
13	126	124
14	128	126
15	131	127
16	134	128
17	136	129
* data from Fourth Task Force for Blood Pressure Control in Children. Data for children on 50th centile for height. Full data including adjustments for height at http://www.nhlbi.nih.gov/files/docs/resources/heart/hbp_ped.pdf		

Appendix 2

Recommended doses of IM benzathine penicillin for use in cases and contacts of APSGN

Weight	Dose of benzathine penicillin (LA Bicillin) 900mg/2.3 ml	Amount
3kg to <6kg	225mg	0.5 ml
6 to <10kg	337.5mg	0.76 ml
10 to <15kg	450mg	1 ml
15 to <20Kg	675mg	1.53 ml
20 kg or more	900mg	2.3ml

NB.to calculate part doses use a concentration of 442mg/mL as per the product info.

IMI: Over 12 months ventro gluteal under 12 months vastis Lateralis

Those who refuse intramuscular penicillin or who are allergic to penicillin should instead receive oral Co-trimoxazole either as:

twice daily for 3 days
or

daily for 5 days.

Adherence to the full course of oral treatment is imperative.

Weight (kg)	**Co-trimoxazole (trimethoprim + sulfamethoxazole)** 200mg/40mg per 5mls
Child (up to 40kg)	4+20mg/kg/dose, **twice daily for three days**; OR 8+40mg/kg/dose **daily for five days***
Adult	160+800mg twice daily for five days
** Consider once daily dosing if expected to improve adherence.*	

Appendix 3 **THIS INFORMATION SHOULD BE ENTERED INTO PATIENT'S HEALTH RECORD**

CONTACT IDENTIFICATION, TRACING AND ASSESSMENT FOR CASES OF APSGN

(Family, household and close contacts who have stayed in the household in the two weeks preceding the onset of APSGN)
Give LA Bicillin to all contacts aged 12 months to 16 years, give LA Bicillin to adults 17 years and over who have skin sores

INDEX CASE NAME	DATE OF BIRTH
COMMUNITY	

Name	DOB	Education Consent	Scabies	Skin Sores	Oedema	Urine	BP	LAB	Lyclear	Swab	Referral	Other
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		
		Y / N	Y / N	Y / N	Y / N			Y / N	Y / N	Y / N		

Appendix 4

COMMUNITY SCREENING FORM FOR APSGN

(All Children aged 12 months to 16 years)

Community:

Name	DOB	SEX	Ethnic group	Scabies	Lyclear	Sores	LA Bicillin	Oedema*	BP	U/A	Referral to MO*	Other
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	
		M/F	A/O	Y/N	Y/N	Y/N	Y/N	Y/N			Y/N	

*** For those with oedema, do urinalysis and blood pressure and refer to medical officer**

THIS INFORMATION SHOULD BE ENTERED INTO PATIENT'S HEALTH RECORD

Appendix 5

Community Screening Summary Report

Community	
Screening Coordinator	
No. of children screened	
Total number of children aged 12 months to 17 years living in the community	
No. of children with skin sores	
No. of children with scabies	
No. of children with oedema	
No. children referred to DMO	
No. probable cases APSGN	
No. confirmed cases of APSGN	

Please return this report with screening forms to
KHR_CommunicableDisease@health.wa.gov.au
Fax KPHU 91941633

Appendix 6

Kidney Disease School Screening Consent Form

Due to the cases of the kidney disease called acute post-streptococcal glomerulonephritis (APSGN) found in our community it is important that we check all children aged 12 months to less than 17 years to find any more sick children and stop the spread of the infection.

The health staff will be looking at the skin for sores and scabies and checking to see of their eyes or face are puffy.

If any skin sores are present the recommended treatment is an injection of penicillin and/or cream for scabies.

If your consent is given screening will be done at the school where possible or in the community.

If your child requires treatment and you choose to be present we will contact you.

If you do not wish to be present the treatment will be given in the presence of health care staff.

If you have any concerns then please contact the health clinic.

I .....parent/guardian

give consent for.....

- to be screened for the kidney problem APSGN **YES / NO**
- to be given a penicillin injection **without my presence** if they have any skin sores **YES / NO**
- to be given a penicillin injection **in my presence** if they have skin sores **YES / NO**
- to be treated with Lyclear cream if they have scabies **YES / NO**

- Does your child have any allergies? YES/NO
  - what are they.....

.....

Signed:.....

Name:.....

Government of Western Australia
WA Country Health Service

Kimberley Population Health Unit

The APSGN Task Force Kimberley WA 2014 Membership

Ms Ashley Eastwood A/Public Health Manager
A/Prof Jeanette Ward Consultant, Public Health Medicine Kimberley Population Health Unit
Dr Gavin Cleland, Consultant Paediatrician, Kimberley Paediatrics
Dr Melanie Thompson, Consultant Paediatrician, Clinical Lead, Kimberley Paediatrics
Dr Stephanie Trust, Medical Director, Kimberley Aboriginal Medical Services Limited
Mr Martin Cutter, Senior Manager Clinical Services, Kimberley Aboriginal Medical Services Limited

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Contributions

Ms Jules Custodio
Ms Marama Haenga
Ms Hilary Carmichael