

"The Prevalence of Sexually
Transmitted Infections in children
presenting to the Hunter Area Sexual
Assault Unit"

Dr Maree Guizzo

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Background



- ⌘ SAU - running since 1984.
- ⌘ Currently Wallsend Campus of HNEAH
- ⌘ Raisa Miller = co-ordinator; Dr Ronda Ticehurst = paediatrician
- ⌘ in-hours medical & counselling support to children/ families post SA
- ⌘ In the 3 years 2001-2003 inclusive 32-68 children seen per year

Background Continued



- ⌘ Out of hours, acute presentations requiring medical r/v & forensic evidence collection managed at the JHH ED by paediatric doctors and counsellors on-call for the SAU.
- ⌘ Referral to the SAU for ongoing counselling (medical follow-up is also organised)

Background Continued



- ⌘ Historically, urine and blood tests if Hx of assault involving potential exchange of bodily fluid
 - ☒ eg oral/ vaginal/ anal penetration (attempted or actual) with penis or tongue
- ⌘ possible that children may not disclose the full details of an assault for many reasons
- ⌘ possible that patients seen may not have had optimal follow up
- ⌘ possible risk of pt and others at risk of STI morbidity/ mortality.

Background Continued

⌘ When testing was offered routinely included

☑ **Blood test for: -**

☒ Hepatitis B & C

- Syphilis screen via TPRH
- (not HIV)

- **Urine Polymerase Chain Reaction (PCR) test for:**

- Neisseria Gonorrhoea
- Chlamydia Trachomatis

Assault rates



⌘ Australia girls

- ☑ between 12-35.7% for contact assault,
- ☑ and up to 42.3% for non-contact abuse

⌘ Australian boys = 4-15.9%

⌘ NZ = 17% females; 4% males

⌘ North American studies

- ☑ females 12.8%-38%
- ☑ males 4.3-7.9% .

Prevalence of STIs in children post SA



⌘ Retrospective 1992 Australian study

☑ Rate=1.9%

⌘ Retrospective 1994 Australian study

☑ children Ix if Hx or Ex suggestive of potential mucosal breach

☑ rate = <1%

⌘ Retrospective 2006 NZ study (1991-98)

☑ 1.2% for <10yo; 5.6% for \geq 10yo –exam/ lab/ both

⌘ Other studies: rates from <1% - 30%

Prevalence of STIs in children post SA



- ⌘ Variation due to inherent population differences/ screening criteria, tests chosen etc
- ⌘ Possible selection bias if only 'high risk' subjects screened

AIM



⌘ 1. To screen *all* children presenting to the HAHS SAU for Sexually Transmitted Infections (STIs) including

☑ Chlamydia trachomatis,

☑ Neisseria gonorrhoea,

☑ Hepatitis B&C, syphilis

☑ Human Immuno-deficiency Virus (HIV)

(irrespective of the assault disclosed by the child)

.....in order to determine disease prevalence.

Aim



⌘ 2. To increase ease of data collection/ review

METHOD



- ⌘ a prospective descriptive study.
- ⌘ All children presenting to the Wallsend SAU during the 12-month study period, 01/05/03 to 30/04/04

METHOD



⌘ Specific & separate data collection sheets

⌘ Baseline data collected including

- ☑ gender
- ☑ age
- ☑ Hepatitis B immunisation status were collected.
- ☑ type of assault
- ☑ relationship of perpetrator to the child
- ☑ findings of STDs on medical examination

METHOD



- ⌘ urine and blood specimens for testing.
 - ☑ Urine 2w after most recent assault
 - ☑ Blood 3m after most recent assault

- ⌘ Ix and results 'chased' for a further 6 months after the study ended.

- ⌘ When investigations were considered overdue, a reminder letter and another request form were mailed to the guardian.

Results



- ⌘ Forty-two children eligible, consented, enrolled.
- ⌘ 23% drop from the 56 children who attended the service in the preceding 12-month period
 - ☑? Decreased incidence
 - ☑? Decreased disclosure rate
 - ☑? Decreased referral from DOCs/ JIRT to SAU

Results



⌘ 31 subjects (74%) were female;

⌘ 11 (26%) were male.

☒ Statistically significant <0.001

⌘ The total age range was 2-15 years (mean=8.3y, SD=4.0, median=8).

☒ Females = 3-15 years (mean=8.5 years, SD=4.1, median=8);

☒ Males = 2-13 years (mean=7.5 years, SD=3.4, median=8).

☒ not statistically significant diff b/w males & females



Interval between first suspected assault and SAU review

Interval	< 1 week	1 week – \leq 1 month	1 month – \leq 3 months	3 months – \leq 6 months	6 months – \leq 12 months	> 12 months	unknown
No. of Pts	2	5	5	5	3	14	8

Type of assault described

- ⌘ nature of the assaults disclosed varied greatly. Eg
 - ☑ a single type of assault on a single occasion;
 - ☑ several different types on multiple occasions.
- ⌘ 26 subjects (62%) - assault involving contact between mucous membranes of perpetrator and subject;
- ⌘ 13 subjects (31%) - assault which did not include mucous membrane-mucous membrane contact
- ⌘ 3 (7%) -no actual disclosure
 - ☑ considered at 'high risk' because of sexualised behaviour or known assault of a sibling.

Table 2: Nature of assaults by age and gender.

<i>category</i>	<i>Gender</i>	<i>Number in Category</i>	<i>Assault disclosed</i>	<i>No. of subjects making disclosure</i>
< 3yo	Male	1	O ro-genital contact	1
	Female	1	D igital penetration of vagina	1
3-6y ^{ars}	Male	3	G enital fondling	1
			D igital penetration of anus	1
			P enile penetration of anus	2
7-9y ^{ars}	Female	11	O ro-genital contact	1
			G enital fondling	3
			D igital penetration of vagina	7
			P enile penetration of vagina	1
			O ro-genital contact	3
	Male	5	S exualised behaviour	2
			G enital fondling	1
			P enile penetration of anus	5
			O ro-genital contact	4
			G enital fondling	2
			D igital penetration of vagina	1
10-13y ^{ears}	Female	6	P enile penetration of vagina	2
			O ro-genital contact	2
			H igh risk	1
			G enital fondling	2
	Male	2	P enile penetration of anus	1
			B reast fondling	2
			G enital fondling	3
			D igital penetration of vagina	2
≥14y ^{ars}	Female	8	P enile penetration of vagina	5
			P enile penetration of anus	2
			P enile penetration of anus	2
			G enital fondling	1
			O ro-genital contact	2
Male	0	-	-	
		Female	5	G enital fondling
Female	5	P enile penetration of vagina	4	
		P enile penetration of anus	1	
		O ro-genital contact	2	

Table 3: Alleged perpetrators as described by subjects who had made a disclosure.

Description of perpetrator	Number (%) of cases where perpetrator was described (n=39)
Biological father	6 (15%)
Step-father/ mother's partner	6 (15%)
Brother	3 (8%)
Step-brother	5 (13%)
Other relative (great-uncle)	1 (3%)
Acquaintance [‡]	15 [†] (38%)
Stranger	3 (8%)

[†] - two subjects described being assaulted by multiple acquaintances

[‡] - This category included other students at the child's school, landlord, etc

Hepatitis B Immunisation status



⌘ 15/42 guardians reported child immunised for
Hep B

⌘ 5/42 said their child had not;

⌘ 22/42 were unsure

Examination findings

- ⌘ 6/42 were not examined during the study period due to the child's distress levels.
- ⌘ disclosures made by these children included
 - ☒ genital fondling (n=2),
 - ☒ oro-genital contact (n=2),
 - ☒ digital penetration of vagina (1)
 - ☒ penile penetration of anus (1).
- ⌘ All six children were advised to complete urine and blood Ix.

Examination findings



⌘ 1/36 was positive for genital warts.

- ☒ a 6 year old girl
- ☒ disclosure of digital penetration of vagina and oro-genital contact by an acquaintance.
- ☒ assaults had occurred over an eight-month period prior to review at the SAU.
- ☒ Her subsequent urine and blood tests were negative.

Ix Results



By the end of 12-month study period + 6-month follow-up period:

- ☒ 31 (74%) had completed both Ix.
- ☒ 2 (5%) had completed urine test alone
- ☒ 1 (2%) had completed blood test alone
- ☒ 8 (19%) had completed neither.

Ix concordance rate according to assault type.



- ⌘ Of the 26 subjects who had disclosed assaults involving mucosal-mucosal contact between perpetrator and child,
 - ☑ 21 (81%) had completed both tests,
 - ☑ 1 (4%) had completed the urine test alone,
 - ☑ 1 (4%) had completed the blood test alone
 - ☑ 3 (11%) had not completed either

Ix concordance rate according to assault type.



- ⌘ Of the 16 subjects who had disclosed assaults not including mucosal-mucosal contact,
 - ☑ 10 (63%) had completed both tests,
 - ☑ 1 (6%) had completed the urine test alone,
 - ☑ none had completed just the blood test
 - ☑ 5 (31%) had completed neither test.

Positive Urine result



⌘ One urine PCR was positive for Chlamydia trachomatis.

☑ an 11 year old girl

☑ disclosure of genital fondling and penile-vaginal penetration as perpetrated by her step-father.

Discussion



⌘ Study limitation

- ☑ small number of subjects

⌘ Study strength

- ☑ prospective design

Discussion



- ⌘ STI rate of 4.8% (n=2) should be considered in the context of relatively low overall study numbers (n=42) and the 74% compliance rate to complete both requested Ixs. ($2/34 = 5.9\%$)
- ⌘ Incubation requirements necessitated waiting periods between clinic review and appropriate time for sample collection.
- ⌘ compliance rate may have been greater had the waiting intervals not been needed

Discussion



⌘ detection of STI's in two subjects highlights a risk for childhood victims of sexual assault.

⌘ previous studies

☑ even in cases considered low risk for STIs, some children were still diagnosed with STIs or had forensic evidence such as semen detected during their examination.

Discussion



- ⌘ should maintain index of suspicion for STIs in children who have been sexually assaulted, in particular, those which have involved mucosal-mucosal contact
- ⌘ study results can be relayed to parents
- ⌘ Ongoing data collection + results monitoring made easier with separate & specific data sheets.