

## Caring for the sexually assaulted child: Follow-up matters

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In 2024, the United Nations Children's Fund (UNICEF) reported that 1 in 8 women (370 million) experienced sexual assault before the age of 18 years, and 8% of these are from East and Southeast Asia.<sup>1</sup> In Singapore, 38.6% of 11,868 sexual assault cases from 2018 to 2022 involved children aged under 16 years.<sup>2</sup> These children are at risk of pregnancy, sexually transmitted infections (STIs) and post-assault trauma in the short term, and face wide-ranging long-term psychosocial and health consequences, including psychiatric disorders and human immunodeficiency virus (HIV) infection.<sup>3</sup> A systematic review of children and adolescents exposed to sexual abuse found that STI detection varied from <1% to 61% in different settings and by type of STI.<sup>4</sup> In a Singapore review of 790 patients aged 0 to 16 years who presented to a paediatric emergency department (ED) for sexual abuse/assault from 2016 to 2020, 6.2% had an STI, with the majority having chlamydia followed by gonorrhoea.<sup>5</sup>

Yao et al. studied the medical records of 278 children and adolescents aged 0 to 16 years, in 292 paediatric ED encounters for non-consensual sexual assault over 20 months.<sup>6</sup> They described patient and assault characteristics, the use of post-exposure prophylaxis (PEP) for STIs and follow-up. Patient demographics were similar to those in previous national and global studies.<sup>1,5</sup> Most were female (96.2%), with a median age of 14.0 years old. Most (64.7%) presented more than 7 days post-assault, well beyond the recommended 72-hour window for HIV PEP and emergency contraception; 61.7% had penile-vaginal exposure and only 7.2% used barrier contraception. Nearly one-third of female patients had no urine pregnancy test done. Baseline STI screening ranged from 83.9% (HIV and hepatitis C) to 85.9% (chlamydia and gonorrhoea). Institutional protocol mandated this only if required by the police. The only STIs diagnosed were *Chlamydia trachomatis* (27/251, 10.8%) and *Gardnerella vaginalis* (102/214, 47.7%).

The first striking finding was inconsistent prescribing and poor adherence to HIV PEP. HIV PEP was

recommended for those who had a penetrating sexual encounter within the last 72 hours with an assailant who had known high-risk factors or multiple assailants. Of 40 eligible patients (13.7%), 35 were offered PEP; 29 started, but only 10 completed the 28-day course. Five eligible patients were missed and left untreated, and another eight patients who started HIV PEP were later deemed ineligible, reflecting the difficulty in accurate risk assessment based on the initial assault history taken, and highlighting a potentially serious gap in treatment. Nearly all assailants were male, and half were over 18 years old or of unknown age. None were known to be HIV- or hepatitis B virus (HBV)-positive, but it was not specified how many were known to be negative or of unknown status. Considering that 1 in 4 assailants were strangers and hence likely to have unknown or unascertainable risk factors, it is surprising that only 40 patients were eligible for HIV PEP, and many were likely ineligible because they presented beyond 72 hours. The authors suggest that clinical decision-making for HIV PEP is complicated by the uncertain history obtained from children regarding assault characteristics. Although risk of HIV transmission is likely low, specific circumstances conferring higher risk, such as traumatic penetration or bleeding, sites of exposure to ejaculate, and assailant's genital lesions may be unknown. Both the World Health Organization and the US Centres for Disease Control and Prevention (CDC) recommend HIV PEP regardless of the type of sexual assault and whether barrier protection was used.<sup>7,8</sup> This includes non-penetrating sexual assault involving any mucosal exposure.

Patients who completed PEP had at least 1 protective social factor, but the study did not evaluate whether drug adverse effects or poor social factors were the main cause of poor adherence. Overall, 51.7% of patients had high-risk behaviours or family/social circumstances, and 10.6% had a comorbid psychiatric illness. Although logistical and financial support is always helpful, children and adolescents may have chaotic lifestyles and a lack of personal responsibility.

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Provision of a 28-day PEP supply, close caregiver supervision or regular phone/video monitoring by a nurse/social worker may improve compliance. A longitudinal cohort study reported that 38% developed post-traumatic stress disorder.<sup>9</sup> Patients may be more receptive only later to enhanced adherence counselling and support. This should be tailored to age-specific needs, for example, involving a responsible caregiver for younger children, and engaging and respecting the autonomy of adolescents.<sup>4</sup> Further work is needed to identify specific social interventions that are effective in supporting a child post-assault.

Similarly, PEP management in HBV non-immune patients was inconsistent; only 61% were offered booster vaccination and 20 of 27 with high-risk encounters received hepatitis B immunoglobulin. HBV waning immunity in this study was consistent with 2018 national seroprevalence surveillance rates of 45.7% in children aged 1 to 17 years and 24% in those aged 13 to 17 years,<sup>10</sup> and raises the question of whether to recommend empiric booster vaccination for high-risk adolescents or routine booster for all.

Another important finding was poor follow-up of STI seroconversion at 2- and 6-months post-assault, and patient well-being. Fewer than 1 in 5 patients (18.8%), regardless of PEP eligibility or administration, had any repeat HIV serology tests done. Similarly, 1 in 5 patients had hepatitis C or HBV serology repeated. All tested negative, but low testing rates reflect missed opportunities for early diagnosis and the inability to ascertain true STI transmission rates post-assault. Although all patients should have medical and social follow-up, about 1 in 10 were not referred to any clinic and just over half (57.7%) attended any clinic follow-up at all. In patients eligible for HIV PEP, poor infectious disease clinic attendance likely contributed to the 2 in 3 who failed to complete PEP. Teleconsultation may improve compliance, but not serological testing.

Referral and follow-up rates with a medical social worker were not reported. The majority of perpetrators of child sexual assault are people known to the patient and frequently from within their household.<sup>5,6</sup> Most patients are already known to community/social services, and many have multiple episodes of sexual assault,<sup>5,6</sup> suggesting that we are missing opportunities to identify at-risk children and intervene appropriately.

HIV PEP should be initiated as early as possible, ideally within 72 hours of exposure. Few patients presented in a timely manner, consistent with previous studies that report presentation within 3 to 5 days by less than one-third of patients in Africa, 56% in Thailand and 80% in Brazil.<sup>4</sup> In a study of 252 cases of child sexual abuse in Singapore, delayed disclosure occurred at a mean of 32 months and was associated

with younger female victims, more severe abuse, and abuse by in-home caregivers.<sup>11</sup> Hesitancy to report sexual assault underscores the need to improve preventive education on sexual violence and address age-specific barriers to reporting. School-based programmes can improve children's knowledge and protective skills,<sup>11,12</sup> and recognition and reporting may be improved by early childhood home visits, and parent and teacher education.<sup>3</sup> Sexual assault is associated with the taboo and secrecy surrounding sex in the Asian cultural context<sup>11</sup>; this unpleasant subject requires more visibility and less stigma, with more avenues for children to disclose their experiences safely.

In this study, rates of empiric treatment for chlamydia, gonorrhoea and trichomoniasis all differed, suggesting that not all treatments were offered by physicians or accepted by patients. Although the study's institutional guidelines did not offer STI treatment to children younger than 13 years and to those presenting beyond 72 hours, STI treatment may be considered for all children regardless of age and time of presentation.<sup>4</sup> There is little direct evidence comparing the test-and-treat approach with presumptive STI treatment/prophylaxis.<sup>4</sup> Presumptive treatment may not be required in pre-pubertal girls if incidence is low and regular follow-up can be assured. Holistic care plans should also include guidance on the use of emergency contraception and the HPV vaccine; the CDC recommends a dose for all unvaccinated patients aged 9 to 26 years at initial assessment, with follow-up doses later.<sup>8</sup>

Overall, we need to pay greater attention to sexually assaulted children. Medical care should continue beyond disclosure. Early identification, robust STI/PEP management and psychosocial care are a priority. Poor compliance and follow-up are affected by pre-existing vulnerabilities and by the challenges of navigating multiple medical and social visits over months. Financial burden, poor understanding of the purpose of outpatient follow-up, Asian cultural perceptions and family dynamics all play a role. In Singapore, the Child Protective Service, which is part of the Ministry of Social and Family Development, offers statutory interventions and specialised school and community interventions. It is important that post-disclosure management is handled sensitively and seamlessly between community and hospital services, focusing on the child's well-being. One-stop multidisciplinary outpatient clinics could streamline follow-up.

The ED visit may ultimately be the only medical encounter and the only window of opportunity to maximise care. We need better coordination among the child, family and professionals in healthcare, social and law enforcement systems; and research to understand barriers in the Singapore context, not

limited to timely presentation but also subsequent compliance. Every sexually assaulted child is one too many, we must do better to reduce their risk of poor outcomes.

### **Ethics statement**

*Not applicable.*

### **Declaration**

*The authors declare there are no affiliations with or involvement in any organisation or entity with any financial interest in the subject matter or materials discussed in this manuscript.*

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