Paediatric HIV and Hepatitis C Conference Update

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I recently attended an update on paediatric treatment of HIV at the Sydney Children's Hospital. Below are some points of interest.

Clinical [1]Pertaining to or founded on observation and treatment of participants, as distinguished from theoretical or basic science. and treatments news

The keynote speaker and invited guest was Dr Hermione Lyall, a paediatrician working in HIV in London. Britain has about 750 HIV-infected children, with a large proportion of these being children born in or whose parent/s come from countries in Sub-Saharan Africa. In at least one hospital, this represents nearly seventy percent of all infected children.

Dr Lyall discussed some of the major differences in the treatment and clinical management of HIV in children.

- Virological: In particular, newborn children infected with HIV often have extremely high viral loads, and unlike adults, this does not subside until up to two years after birth. This means there is an important emphasis on getting viral control in newborn children during this period, particularly as these children are often at risk of developing serious opportunistic infections. PCP is very common in young infants, as are encephalopathies and recurrent bacterial infections. Its common to use PCP prophylaxis in small children for this reason. These infections can occur at all parts of the clinical spectrum, and are not necessarily related to CD4 cell counts. However, viral load is often not as predictive of clinical outcome in children.
- Outcomes: Children, particularly those infected in utero who are very sick as infants can often have greater mortality rates and shortened survival time, so emphasis is on the prevention of infection and prophylaxis after birth. A range of drugs can be and are used for this. Children who survive HIV in infancy generally go on to have mortality rates similar to adults, and, with treatment, usually have a good prognosis.
- Neurological: An important issue is neuro-development problems, with two thirds of children in a UK cohort [2]
- Immunological: Children's immune systems, particularly very young children, are quite different from adults. For example, children can have very high CD4 cell counts, often well above adult ranges. Immune reconstitution following antiviral treatment also follows quite different patterns, and often occurs much later than in adults. For all these reasons, there are special treatments guidelines for children, which can be found on the website of the Children's HIV Association of Britain, accessible through the British HIV Association website [3]. Currently, it's recommended children start on a combination of 2 NRTI [4]A type of anti-HIV drug that works by inhibiting a stage of the HIV life cycle called reverse transcription. Non-nucleosides work in a similar way, but are chemically different. drugs plus either nevirapine, or a boosted protease inhibitor such as Kaletra. Older children can also use efavirenz.
- Pharmacological: Not all licensed drugs have children's doses, and children metabolise drugs quite differently to adults. For example, the liver [5]A large organ, located in the upper right abdomen, which assists in digestion by metabolising carbohydrates, fats and proteins, stores vitamins and minerals, produces amino acids, bile and cholesterol, and removes toxins from the blood. metabolism pathways used in adults are not the same in children, so dosing, for example, of protease inhibitors, requires careful planning and sometimes, adjustment. The Paediatric European Network for the Treatment of AIDS (PENTA) is conducting studies in pharmacokinetics and therapeutic drug monitoring for children. In addition, fixed dose combinations may present some problems in children, in that you can't simply assume you'll get the right dose of a combination drug just by halving it: you may simply end up with less or sub-therapeutic doses of some of these drugs.
- In older children and young adults, adherence can also be a major issue. Tolerability, taste and the ease of administration of drugs may be some of the factors to consider when choosing combinations.
- Side effects: The majority of children on antiviral therapy will tolerate the drugs relatively well. However, there is limited data about the long-term effects of antivirals [6]A medication or substance which is active against one or more viruses. May include anti-HIV drugs, but these are more accurately termed antiretrovirals. in children. A recent study reported that many children, by the time they reached adolescence reported one or

more signs of lipodystrophy or fat changes, but these were all children who had received protease inhibitors and/or d4T. With less toxic drugs now commonly used, it's hoped that this will diminish.

Australian context

Many of the children in Australia living with HIV are now entering adolescence, and this raises a range of complex care and support issues. These include:

- Managing HIV in the context of becoming independent and sexually active etc.
- Preparing children for the transition from paediatric services into adult health services – perhaps something in which NAPWA could take some role
- Adherence is often a major issue for adolescents, as it raises complex questions around disclosure, independence, and the effect of taking treatments on lifestyle and freedom.
- Many of the children diagnosed with or at risk of vertically transmitted HIV infection have one or more parents from a high-prevalence country. Up to 50 percent of Australia's African continent refugees, for example, come from the Sudan, a priority country in our refugee response. There can be complex issues about testing and then managing pregnant HIV-infected women in these contexts.
- Virginia Furner reported that, at Albion Street over the last 20 years, the clinic had managed 23 women and 26 pregnancies. In the years since the use and availability of combination antiretroviral [7]A medication or other substance which is active against retroviruses such as HIV. treatments, there have been 17 HIV negative and 1 HIV positive babies born to women using the Albion Street service. The 1 HIV positive child was despite the mother being on a combination of Combivir and nelfinavir, however, it was felt there may have been some adherence problems in the mother.
- Risk factors of women whose HIV was diagnosed during pregnancy included: The mother/father were from a high prevalence country (10 cases); and injecting drug use.

Antenatal screening

There was a debate about the pros and cons of universal antenatal screening, although the outcome and debate were unfortunately hampered by a lack of clarity as to whether what was being proposed was universal screening of all women, or the routine offering of a HIV test to women.

Those present, who were largely paediatricians, paediatric nurses and allied health professsionals working with children were in overwhelming favour of universal screening of all pregnant women. This currently occurs in New Zealand, but they have a much higher prevalence of HIV infection in children, particularly in immigrant and refugee African communities.

- children and young people
- conference reports
- Positive women
- Positive Women's Network

Links:
[1] http://www.napwa.org.au/glossary/term/475
[2] http://www.napwa.org.au/glossary/term/477
[3] http://www.bhiva.org.uk
[4] http://www.napwa.org.au/glossary/term/104
[5] http://www.napwa.org.au/glossary/term/102
[6] http://www.napwa.org.au/glossary/term/123
[7] http://www.napwa.org.au/glossary/term/122

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