Pediatric NeuroAIDS in Bangkok

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Introduction

• Of the new infections that occur daily, more than 90% occur in developing countries, and approximately 40% occur in women of childbearing age.

• In general, more rapid disease progression is observed in vertically infected infants than in children infected at an older age or in adults.
Introduction

• The majority of vertically infected infants will develop HIV-1-related symptoms within the first year of life and approximately half will develop an AIDS-defining condition by 5 years of age.

• Neurological disease is the first manifestation of AIDS in 10% to 20% of symptomatic HIV infection. Thirty percent to 40% of patients with AIDS will have clinical neurological dysfunction.
Introduction

- Majority of children with AIDS have CNS involvement including acquired microcephaly, diffuse cerebral atrophy, calcifications of the basal ganglia, HIV-associated encephalitis, and opportunistic CNS infections.
• Primary lymphomas, progressive multifocal leukoencephalopathy, and vacuolar myelopathy are very uncommon in childhood.

• Treatment-related complications include AZT myopathy, d4T associated neuropathy
Introduction

• The accumulated reported number of Thai people with AIDS was 322,565 (died, 74,359) in the year 2004

• The incidence of these neurological complications in Thai pediatric population is still to be determined
Introduction

- C Pancharoen reported 8 children with cryptococcal meningitis during the period between 1991-2000, 5 cases had HIV infection and 2 had SLE.
- A Visudhiphan reported 2 children with stroke and seizures as a presenting signs of AIDS. The author emphasized that HIV infection must be included in the DDX of pediatric stroke who is at risk of acquire this infection.
K Sanpakit K reported 7 HIV-infected children with malignancies at Siriraj Hospital from January 1995 to October 2001. All patients had NHL stage III or IV. Burkitt's lymphoma was the predominant type. One of them with Burkitt's lymphoma stage III also had central nervous system (CNS) relapse at the time of death.
Purpose

• To present our experience at Department of Pediatrics, Pramongkutklao College of Medicine regarding neurologic complication in children with AIDS.
Method

• Children with AIDS with the follow up period not less than 6 months were identified from the Pramongkutklao College of Medicine Pediatric AIDS clinic patient files database.

• The following parameters were evaluated: age at the time of evaluation and follow up, duration of follow up, sex, mode of transmission, and neurological status.
Method

• Children with AIDS who were noted to have abnormal neurological status will be referred to pediatric neurologist for further evaluation.

• Children with febrile convulsion, and brief non-recurrent nonspecific neurological symptoms were not included in the study.
Method

• Antiretroviral agents were provided in children with AIDS who were less than 12 months, in clinical staging B, C, or had CD4 less than 20%.

• Regimens were either d4T (or AZT) + 3TC + NVP, d4T (or AZT) + 3TC + EFV, or d4T (or AZT) + 3TC + IDV/ RTV.
Results

• The total of 103 children with AIDS with minimum follow up period of 6 months were identified, 58 were girl and 45 were boy.

• All but one acquired infection via vertical transmission

• One patient with postnatal transmission had beta thal/Hb E with history of multiple blood transfusion
Results

• Age at the time of evaluation was from birth to 15 years and 4 months. Follow up duration ranged from 6 months to 14 years and 10 months (mean = 4 years).

• Twelve children (12%) were identified to have neurological symptoms.
## Results

<table>
<thead>
<tr>
<th>Pts#</th>
<th>Age</th>
<th>Neurological complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 mo</td>
<td>Global developmental delay</td>
</tr>
<tr>
<td>2</td>
<td>6 yrs</td>
<td>AIDS encephalopathy, acquired microcephaly, epilepsy</td>
</tr>
<tr>
<td>3</td>
<td>4 mo</td>
<td>Recurrent Salmonella group D meningitis with subdural effusion (8 months between 2 illness)</td>
</tr>
<tr>
<td>4</td>
<td>5 yrs</td>
<td>Global developmental delay</td>
</tr>
<tr>
<td>5</td>
<td>11 Yrs</td>
<td>Mild mental insufficiency</td>
</tr>
<tr>
<td>6</td>
<td>4 Yrs</td>
<td>HIV myelopathy with progressive spastic diplegia, normal cognition</td>
</tr>
<tr>
<td>7</td>
<td>11 Yrs</td>
<td>Cryptococcal/ Tuberculous meningitis, hydrocephalus and subsequent recurrent vascular headaches</td>
</tr>
<tr>
<td>8</td>
<td>7 Mo</td>
<td>Aseptic meningitis</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th>Pts#</th>
<th>Age</th>
<th>Neurological complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>2.5 Yrs</td>
<td>HIV encephalopathy, acquired microcephaly</td>
</tr>
<tr>
<td>10</td>
<td>1.2 Yrs</td>
<td>Global developmental delay, acquired microcephaly, epilepsy</td>
</tr>
<tr>
<td>11</td>
<td>2.4 Yrs</td>
<td>Tuberculous meningitis, spastic quadriaparesis, epilepsy</td>
</tr>
<tr>
<td>12</td>
<td>5 years</td>
<td>Peripheral neuropathy (d4T+ddI was changed to AZT+3TC+IDV)</td>
</tr>
</tbody>
</table>
Conclusion

• Neurologic complication is quite common in Thai pediatric AIDS.
• These included AIDS encephalopathy, acquired microcephaly, bacterial/ tuberculous/ cryptococcal meningitis
• HIV associated myelopathy was noted in one child
• Treatment-related neurologic complication includes peripheral neuropathy in a child who was d4T+ddI
Thank You