HIV/AIDS for Speech Language Pathology

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Moderated by:
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HIV/AIDS for Speech-Language Pathologists

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HIV/AIDS

• Human Immunodeficiency Virus
• Acquired Immunodeficiency Syndrome

Person with HIV
severely compromised
opportunistic infection
Initial Historical Milestones
- MMWR June 5, 1981
  - 5 cases *Pneumocystis carinii* pneumonia (PCP)
  - Kaposi’s sarcoma
  - Persistent Generalized Lymphadenopathy (PGL)
- Increased demand for PENTAMIDINE
- Gay Related Immuno-Deficiency (GRID)
- Hemophiliac involvement
- Acquired Immuno-Deficiency Syndrome (AIDS) coined (July 27, 1982)

Basic Statistics
- Worldwide
  - ~40 million living with HIV
  - ~2.3 million newly infected/yr
- United States
  - ~1 million living with HIV
  - ~50,000 newly infected/year with 16% unaware of status

HIV Transmission
- Mainly spread by
  - Unprotected sex
  - Sharing needles, syringes
- Less commonly by
  - Birth
  - Breast Feeding
  - Blood transfusions
  - Contaminated needle
  - Bite
  - Contact between broken skin or mucous membranes with HIV-infected blood or bodily fluids
**IMMUNE SYSTEM**

- **Non-Specific Immune Responses**
  - Physical barriers (skin)
  - Soluble factors

- **Specific Immune Responses**
  - Antigen

**How immune system works**

- Bone Marrow
- Thymus
- Lymph Nodes
- Spleen, tonsils, adenoids, appendix, Peyer’s patches

**LYMPHATIC SYSTEM**

- Network of vessels
- Channels lymph fluid to lymph nodes
- Directs lymph fluid toward chest
- Empties into bloodstream
- Reabsorbed by body tissues

**IMMUNE CELL ASSEMBLY**

- Bone Marrow
- Thymus
- Lymph Nodes
- Spleen, tonsils, adenoids, appendix, Peyer’s patches
**B-Cell Lymphocytes**

- Maturation process occurs within bone marrow
- Identify antigen
- Triggered to produce antigen-specific antibody proteins

**T-Cell Lymphocytes**

- Maturation process initiated within bone marrow
- Completed in thymus
- Several categories
- Detects antigen
- Destroys antigen

### Classification System-HIV/AIDS
Adolescents & Adults

<table>
<thead>
<tr>
<th>CD4 CELL COUNTS CATEGORY</th>
<th>CLINICAL CATEGORY A (asymptomatic)</th>
<th>CLINICAL CATEGORY B (not A or B category)</th>
<th>CLINICAL CATEGORY C (AIDS indicator condition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1≥500/(mm³)</td>
<td>A1</td>
<td>B1</td>
<td>C1</td>
</tr>
<tr>
<td>2 200-499/(mm³)</td>
<td>A2</td>
<td>B2</td>
<td>C2</td>
</tr>
<tr>
<td>3&lt;200/(mm³)</td>
<td>A3</td>
<td>B3</td>
<td>C3</td>
</tr>
</tbody>
</table>

CDC, 1993
Maternal HIV antibodies cross placenta
- Falsely HIV+ 9 to 18 months
- CD4+ t-cell count higher in infants

<table>
<thead>
<tr>
<th>Immune category</th>
<th>&lt;12 mths</th>
<th>1-5 yrs</th>
<th>6-12 yrs</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt;1500(\mu L)</td>
<td>&gt;1000(\mu L)</td>
<td>&gt;500(\mu L)</td>
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<tr>
<td>2</td>
<td>750-1499(\mu L)</td>
<td>500-999(\mu L)</td>
<td>200-499(\mu L)</td>
</tr>
<tr>
<td>3</td>
<td>&lt;750(\mu L)</td>
<td>&lt;500(\mu L)</td>
<td>&lt;200(\mu L)</td>
</tr>
</tbody>
</table>

Classification System-HIV/AIDS
Children

Course of Disease
- Initially, flu-like symptoms
- Incubation period 8 to 10 years
- Associated with peripheral & central nervous system symptoms that manifest as communication disorders
HIV/AIDS & Related Communication Disorders

**DIRECT**
- Damages cell tissue
- Releases toxins
- \( \Delta \) cell metabolism

**INDIRECT**
- Opportunistic infections
- Ototoxicity

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**DIRECT**

Developmental/Cognitive

**CHILDREN**
- **ENCEPHALOPATHY**
- Microencephaly
- Developmental Issues
  - Mental retardation
  - Cerebral palsy
  - ADHD
- Other cognitive, behavior and motor deficits

**ADULTS**
- **ENCEPHALOPATHY**
- Microencephaly
- Developmental Issues
  - Mental retardation
  - Cerebral palsy
  - ADHD
- Other cognitive, behavior and motor deficits

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**DIRECT**

ORAL MANIFESTATIONS

- Candidiasis*
- Salivary gland disease*
- Herpes Simplex
- Oral hairy leukoplakia
- Kaposi’s sarcoma
- Advanced periodontal disease

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OTOLOGIC/AUDIOLOGIC MANIFESTATIONS

- Otitis media*
- Otitis Externa
- Osteomyelitis

FEEDING/SWALLOWING

- Dysphagia*
  - Oral
  - Pharyngeal
  - Esophageal

Practical Lessons Learned

- HIV = infection control
- Indeed, SLPS serve HIV/AIDS populations
- Various immuno-compromised populations served
Standard Precautions

- Appropriate personal barriers (gloves, masks, eye protection, gowns) must be worn when performing procedures that may expose to infectious agents
- Hands must be washed before and after every patient contact and after glove removal
- “Touch” and “splash” surfaces must be pre-cleaned and disinfected
- Critical instruments must be sterilized
- Infectious waste must be disposed of appropriately