Dysphagia Intervention in Persons Infected with HIV
Disclosure Statement

No relevant financial relationship(s) or nonfinancial relationship(s)
Abilou Amundson is employed by University Medical Center.
Chris Bolingeris employed by University Medical Center.
Jennifer Hanners is employed by University Medical Center.
Ricky Vaughn is employed by CHAMPS.
Vipul Desai is employed by Texas Tech University Health Sciences Center.

Disclosure:
The presenters have no relevant financial or nonfinancial relationships
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This presentation is brought to you by:
LEARNER OUTCOMES

Following the presentation, the participant will be able to:

1. Identify speech-language pathologist’s role in treatment of persons with HIV/AIDS.
2. Identify important considerations in evaluation and treatment of HIV positive patients regarding dysphagia and nutrition.
3. Identify potential barriers and provide solutions that one may encounter when treating persons with HIV/AIDS.
Agenda

I. Introduction and Evolution of HIV Clinic
II. Introduction to HIV/AIDS Population
III. Role of the SLP
IV. Least Restrictive Protocol and Clinic Nuances
V. Introduction to Social Aspects
VI. Social Dynamics and Quality of Life
VII. Case Studies
VIII. Question & Answers
Brief history of SLPs joining the multidisciplinary HIV/AIDS treatment team.
Known Deficits
(supported by literature):

• Cognition
• Decreased strength and range of motion of swallow musculature as demonstrated in immunosuppressed chemotherapy patients
• Pharmacological side–effects
Over 300 swallow screenings and evaluations have been completed since November 2011!
First Impressions
HIV/AIDS
101
HIV came from a similar virus found in chimpanzees – SIV
HIV probably entered the United States around late 1960s
CDC in 1981 noticed unusual clusters of Kaposi’s sarcoma in gay men in NY and San Francisco, which led to the disease to be called GRID (Gay Related Immune Deficiency)
By 1982 the disease was apparent in heterosexuals
1983–1984--Scientists (Dr. Barré–Sinoussi, Luc Montagnier, Dr. Robert Gallo) identify HIV (initially called LAV or HTLV–III) as the cause of AIDS
1987– AZT is the first drug approved for treating AIDS

http://www.avert.org/aids-timeline.htm
Epidemiology

- Males > females
- Occurs in all ages and ethnic groups
- All areas of the country are affected
- There are 1.2 million people with HIV in the US, with 50,000 new cases each year. 1 in 5 unaware of their infection (18.1%)
- An estimated 15,529 people with AIDS died in 2010, and 636,000 people with AIDS in the US have died since the epidemic began

http://www.cdc.gov/hiv/resources/factsheets/us.htm
Piot et al. NEJM, June 06, 2013; vol 368: p 2210–18
Cases of HIV infection and AIDS in the United States and Dependent Areas, 2008

Sex of adults and adolescents with HIV/AIDS diagnosed during 2008

Transmission categories of adults and adolescents with HIV/AIDS diagnosed during 2008

http://www.cdc.gov/hiv/resources/factsheets/us.htm
Paradigm Shift

This image is used for educational purposes only. Cover from Newsweek, Nov. 18, 1991. Image is copyrighted.
Estimated Number of AIDS Cases, Deaths, and Persons Living with AIDS, 1985–2006—United States and Dependent Areas

Note. Data have been adjusted for reporting delays.
Modes of transmission

- Sexual contact
  - Homosexuals (MSM), & Heterosexuals

- Parenteral transmission
  - IVDA, Hemophiliacs, accidental needle sticks

- Vertical transmission
  - From mother to child during delivery (MTCT)
Mechanism of Action of ARVs

1. HIV fuses to the CD4 cell membrane
2. Virus enters the cell
3. Reverse transcriptase converts single strand RNA into double strand DNA
4. The DNA enters the nucleus and inserts itself into the host cell’s own DNA. The cell begins to make copies of HIV components.
5. An enzyme called protease helps the new virus particles mature.

NNRTI

Integrase Inhibitor

NRTI

Protease Inhibitor

Fusion Inhibitor & Chemokine Receptor Antagonist

Illustration by David Klemm
T-cell count & RNA load from HIV-AIDS
Phases of Infection

Natural History of HIV-1 Infection

CD4 cells / cubic mm

- Thrush
- Oral hairy leukoplakia
- Tuberculosis
- Pneumocystis carinii pneumonia
- Histoplasmosis
- Coccioidoidomycosis
- Cryptococcosis
- Toxoplasmosis
- Atypical herpes simplex virus disease
- Cryptosporidiosis
- Cytomegalovirus disease
- Mycobacterium avium complex disease

Months

Years after onset of HIV infection
Rate of Progression

- Depends on:
  - Viral load (no. of RNA copies/ml plasma)
    - Viral load is the most important marker to determine prognosis and effectiveness of treatment
  - Genetics
  - SEC
  - Co-infections
  - Comorbidities
List of symptoms of HIV/AIDS:

**Early infection:** Acute Retroviral Syndrome

- More common to develop a brief flu-like illness 2–4 weeks after becoming infected. Signs and symptoms may include:
  - Fever
  - Headache
  - Sore throat
  - Swollen lymph glands
  - Rash
Later infection:
May remain symptom-free for eight or nine years or more

- You may develop mild infections or chronic symptoms such as:
  - Swollen lymph nodes — often one of the first signs of HIV infection
  - Diarrhea
  - Weight loss
  - Fever
  - Cough and shortness of breath
Diagnosis

- Home confirmatory test
- Laboratory Testing
  - Screening test
    - ELISA
  - Confirmatory tests
    - Western Blot analysis
## Recommendations for Initiating ART

<table>
<thead>
<tr>
<th>Clinical Category or CD4 Count</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ History of AIDS-defining illness</td>
<td></td>
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<tr>
<td>▪ CD4 count &lt;350 cells/µL</td>
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<tr>
<td>▪ CD4 count 350-500 cells/µL</td>
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<tr>
<td>▪ Pregnant women</td>
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<tr>
<td>▪ HIV-associated nephropathy (HIVAN)</td>
<td></td>
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<tr>
<td>▪ Hepatitis B (HBV) coinfection, when HBV treatment is indicated*</td>
<td>Initiate ART</td>
</tr>
</tbody>
</table>

* Treatment with fully suppressive drugs active against both HIV and HBV is recommended.

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Coffey S. Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents: Initiation of Therapy. AIDS Education and Training Centers, National Resource Center; January 2013
Antiretroviral Drug Approval
1987–2012
# ARV Medications

### NRTI
- Abacavir (ABC)
- Didanosine (ddI)
- Emtricitabine (FTC)
- Lamivudine (3TC)
- Stavudine (d4T)
- Tenofovir (TDF)
- Tenofovir (GS-7340)
- Zidovudine (AZT,ZDV)

### NNRTI
- Delavirdine (DLV)
- Efavirenz (EFV)
- Etravirine (ETR)
- Lersivirine (LRV)
- Nevirapine (NVP)
- Rilpivirine (RPV)

### PI
- Atazanavir (ATV)
- Darunavir (DRV)
- Fosamprenavir (FPV)
- Indinavir (IDV)
- Lopinavir (LPV)
- Nelfinavir (NFV)
- Ritonavir (RTV)
- Saquinavir (SQV)
- Tipranavir (TPV)

### Integrase Inhibitor (II)
- Elvitegravir (EVG)
- Dolutegravir (DTG)
- Raltegravir (RAL)

### Entry Inhibitors: Fusion Inhibitor
- Enfuvirtide (ENF, T-20)

### CCR5 Antagonist
- Maraviroc (MVC)

### Cyt P450 Inh
- Cobicistat (COBI)
Role of the SLP

- Establishing relationships with physician(s)
- Understanding of the disease
- Side-effects of medication
  - Example 1 – Truvada
  - Example 2 – Combivir
- Understanding of immunosuppression
Least Restrictive Protocol and Clinical Nuances
Least Restrictive Protocol
HIV Swallow Evaluation:

- Swallow assessment
  - Bolus manipulation
  - Timeliness
  - Strength & Coordination
  - s/s of aspiration
HIV Swallow Evaluation:
(continued)

- Therapeutic Intervention
  - Oropharyngeal Exercise Regimen
  - Diet Modifications
  - Swallow Precautions
HIV Swallow Evaluation: (continued)

- Documentation
  - Primary Diet Recommendations
  - Secondary Diet Recommendations
- Multidisciplinary Team Education
Unique opportunity with this population
Least Restrictive Protocol
HIV Swallow Evaluation:

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Social Dynamics and Quality of Life Issues In This Population
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• Stigma
• Cycle of Poverty
• Mental Health
• Substance Use and Addiction
• Secondary Issues with HIV Meds
Social Dynamics and Quality of Life Issues In This Population

- Stigma
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Case Studies
Reported swallowing difficulties in HIV

- Aspiration
- Coughing
- Gagging/strangling with solids/textures
- Odynophagia (painful swallowing)
- Food refusal
- Nausea & vomiting
- GERD
- Reduced feelings of hunger

Pressman, 1992: 2010: Rabie et al., 2007
Consequences of dysphagia

- Compromised respiratory system (secondary to aspiration)
- Reduced social interaction & communication
- Increased stress
- Reduced quality of life
- Pain/discomfort
- Constipation
- Dental problems
- Malnutrition
- Reduced ability to fight infection

Andrew & Sullivan, 2010; Reilly et al., 2011
Case 1

- Age: 38
- Gender: Male
- HIV diagnosis date: > 7 years
- AIDS: Yes
- External Concerns: pt reported not taking meds
- Presenting symptoms:
  - A) throat clearing and coughing with PO trials of solids
  - B) globus sensation following PO trials of solids
- Recommendations:
  - A) Modified diet (i.e., mechanically altered or puree)
  - B) Crush all medications and take with puree. If med is unable to crush, liquid will be prescribed.
  - C) F/u with ST at next clinic appt
Reasons for dysphagia in persons with HIV/AIDS (cont.)

HIV related:
- Structures may be affected (e.g., esophageal abnormalities)
- Function may be affected (e.g., encephalopathy or dementia)
- Pharmacological effects (e.g., nausea, vomiting, and reduced appetite)
- Candidiasis (oral, pharyngeal, laryngeal, esophageal)
- Odynophagia (pain during swallow)
- GERD

Schwartz & Rothlingova, 2011
Case 2

• Age: 34
• Gender: Male
• HIV diagnosis date: >2 years
• AIDS: no
• External Concerns: hx of cancer
• Presenting symptoms:
  • A) coughing and throat clearing with thin liquids
  • B) pneumonia
  • C) severe reflux
• Recommendations:
  • A) Oropharyngeal exercise regimen
  • B) Swallow precautions
  • C) F/u with ST while inpatient and then at next clinic appointment
Case 3

- Age: 33
- Gender: Male
- HIV diagnosis date: >10 years
- AIDS: yes
- External Concerns: hx of multiple opportunistic infections and substance abuse.

Presenting symptoms:
- A) coughing and throat clearing with thin liquids
- B) pneumonia
- C) globus sensation

Recommendations:
- A) MBS to further evaluate swallow
- B) Swallow precautions
Case 3
References

References


References


Please feel free to ask questions at this time.

Thank you for the opportunity to share with you.

For a copy of the presentation, please email: Christopher.bolinger@umchealthsystem.com