Clinicin Perspectives on the Need for HIV Drug Resistance Surveillance in Wisconsin

The New York Times

“Rare and Aggressive H.I.V. Reported in New York”
Feb 12, 2005

“H.I.V. Strain Adds Urgency to Changes in City AIDS Program”
Feb 16, 2005

Elizabeth Wagner
August 11, 2006

Background

• What is HIV drug resistance?
  • Years or decades of drug therapy
  • Highly mutable virus

• 4 Drug classes
  • 11 “nukes”
  • 3 “non-nukes”
  • 8 protease inhibitors
  • 1 fusion inhibitor

• Most patients are treated with triple or quad therapy
Background

- **What are the consequences of HIV drug resistance?**
  - Reduced effectiveness and higher cost of therapy
  - Progression to AIDS and death
  - Transmission of resistant virus

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Background

- **How prevalent is HIV drug resistance among newly diagnosed patients?**
  - 1082 patients in 10 cities 1999-2001\(^1\):
    8.3% of virus showed resistance to one or more drugs
  - 539 patients in 5 states 2003-2004\(^2\):
    15% of virus showed resistance to one or more drugs

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1 Weinstock et al, JID 2004
2 Bennett et al, CROI 2005
Background

• How prevalent is HIV drug resistance among newly diagnosed patients?

![Graph showing prevalence of HIV drug resistance over years.](Little et al. NEJM 2002)

Project Goal

• To identify clinician perspectives on the need for HIV drug resistance surveillance in Wisconsin
Methods

- Interviews with sentinel HIV clinicians interested in HIV drug resistance issues
- Interviews with CDC-funded sites of resistance surveillance
- Cross-sectional survey of clinicians in Wisconsin who treat HIV/AIDS patients

Survey

- Mailed a self-administered, written survey
- Three sections:
  - Physician and Practice Description
  - Resistance Testing Practices
  - Views on Surveillance Needs
- Sampled all WI clinicians (69 MDs, 1 PA) from ADAP database who had written an HIV/AIDS related prescription in the last 5 years
- Second mailing to non-responders
- Response rate 60% (42/70)
Demographics of Respondents

- Mean years treating HIV patients – 15.5 yrs
- Specialty – 78% Infectious Disease
- Mean practice size 63.9 patients (range 3-250)

Perceived Levels of Overall HIV Drug Resistance in Wisconsin

* Among all patients tested for drug resistance
Resistance Testing Guidelines

• DHHS Recommendations
  • Testing for all primary/acute infections (i.e. treatment naïve patients)
  • Testing for chronic infections less than 2 years old when the prevalence of resistance is greater than 5%
  • Testing at times of treatment failure

• 94.1% of Wisconsin clinicians order a resistance test when drug therapy fails

• 61.9% of Wisconsin clinicians order a resistance test for treatment naïve patients

Resistance Testing Practices

How often do you order a resistance test for someone who is...

- Newly Infected: 67.7%
- Newly Diagnosed: 59.4%
- New to Practice: Almost never
- Chronically Infected: About half the time
- Almost always
Treatment Naïve Resistance Testing Practices

How significant are the following factors in the decision to order a resistance test?

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<th>Somewhat insignificant</th>
<th>No impact</th>
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<tr>
<td>Cost/insurance coverage</td>
<td>34%</td>
<td>28%</td>
<td>16%</td>
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<td>Exposure category</td>
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<td>19%</td>
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</table>

Surveillance Data

Information to be included in surveillance reporting

- Specific mutation resistance
- Drug class resistance
- Trends in specific mutations
- Trends by drug class
- Breakdown by demographics
  - gender, exposure category, geographic location
Conclusions

• Most HIV clinicians surveyed are aware of and experienced in the issues of HIVDR
• Resistance testing is a commonly utilized tool in HIV treatment
• The perceived prevalence of HIVDR in Wisconsin is comparable to national levels
• Resistance surveillance would be informative and useful to WI HIV clinicians

Limitations

• Small sample size and selection bias (ADAP list)
• Response rate
• Self-reported data
• Recall bias – may not reflect actual practices and levels of resistance
Future Directions

• Practicality of surveillance in low HIV prevalence state
• Implementation of surveillance
  – Models to follow (TB, CDC, NY state)
  – Potential issues (cost, legality, data management)

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