Targeted Testing and Treatment of Latent TB infection

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Disclosures

None
Learning Objectives

- Explain how the 3 HP regimen (INH + rifapentine) given by DOT (Directly observed therapy) over a 12 week period can be implemented in a private clinic.

- Describe how the video component of the 3HP regimen is integrated.

- Explain the advantages of providing patients with 12 weeks of DOT for Latent TB infection compared to a standard INH regimen of 9 months.
As of December 2015

- Southern California membership: 4,102,673
- Panorama City Medical Center membership: 238,483
Demographics: Race/Ethnicity

- Caucasian: 36.2%
- Black/Afr Amr: 8.7%
- Asian/Pac Isl: 8.9%
- Latino: 44.9%
- Native American: 0.3%
- Multi-Racial: 1.0%

Pie chart showing the distribution of race/ethnicity.
Background

- Rise in active TB cases since: 2011 (7), 2012 (8), 2013 (10)
  - Majority of patients born outside USA and not recent immigrants
  - Several of these patients had DM, some had uncontrolled diabetes
  - In some cases there was a delay in diagnosis that led to extensive evaluation of staff and other patients seen in the clinics for TB exposure

- Education campaign started for staff and providers about early diagnostic tests and early isolation of suspected TB cases

- Looked into ways to improve care for Latent TB patients
Our Project

• Initiated DOT program as a best practice in our clinic in 4/2012
  • Isoniazid and rifapentine (3HP) given as DOT x 12 weeks

• Reason for starting:
  – To expedite treatment for those requiring alpha TNF blocker therapy (e.g.: psoriasis): shorter 12 week course as opposed to 9 months course.
  – Clinic monitoring ensures that patients have received and completed Latent TB treatment
  – To reduce non-compliance with INH where there is no definite way to check compliance and treatment completion
Data Collection

• This study started to determine success rate with 3HP regimen
• LA county TB control was interested in our program
• IRB approved in September, 2015
• IT support found data with certain diagnosis and providers
  – Providers: Panorama City Infectious Disease Physicians
  – ICD 9 codes:
    • PPD positive : 795.81
    • Latent TB of lung: 011.80
    • Positive IGRA: 795.51
    • Screening for pulmonary TB: 211.1
    • Lab test – IGRA: 86480A
    • Skin test – PPD: 86580B
Latent TB Infection (LTBI)

- Results of those patients seen from 4/1/2012 to 12/31/2015 are included in this presentation
- Patients seen in ID clinic on a referral basis
- Choice of regimen decided by treating ID physician and patient
- Primary goal: start and complete regimen successfully without complications
- Diagnostic testing
  - Baseline test: PPD and/or IGRA
  - CXR
  - Prior to starting therapy: CBC, LFTs, HIV
Latent TB Infection (LTBI)

- Total number of patients: 297
- Reason for testing by primary care providers:
  - Routine testing: 215 (includes 38 with Pre-DM and DM diagnosis)
    - Work-related: hospital, SNF, LAUSD employees and volunteers
    - Students: health-related (nursing, phlebotomist)
  - Underlying diagnosis:
    - Rheumatologic: 11*
    - Psoriasis/ pemphigus: 18*
    - Chronic kidney disease - CKD /ESRD: 21
    - Chronic Hep B/Hep C/Liver disease/ transplant candidate: 6
  - TB contacts: 26

*waiting for alpha TNF blocker Therapy
LTBI Treatment: Total Patients

- Total number of patients: 297
  - DOT regimen with 3 HP: 154
  - Conventional treatment with daily INH: 69
  - No treatment in our clinic: 74
    - Declined treatment: 57 (19%)
    - Received Rx prior to being a Kaiser Member: 17 (5.7%)
# Patient Demographics

| Age       | Range: 19 – 85 y/o  
|           | Average age: 47.7  
|           | >65 y/o: 33  
|           | >65 y/o (DOT): 15 (66-76 y/o)  
| Sex       | M: 118  
|           | F: 179  
| Ethnicity | • Hispanic: 150 (Mexico, El Salvador, Guatemala)  
|           | • Filipino: 66  
|           | • Caucasian / White: 20  
|           | • Indian Subcontinent: 9  
|           | • Asian: 14 (China, Vietnam, Indonesia and Thailand)  
|           | • Others: 38 (Uganda, Nigeria, Armenia, Haiti, Germany, Lebanon, Russia, Colombia, Ghana, Puerto Rico)  

### 3 HP Regimen - Process

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patients who will benefit from early completion of treatment (waiting for immune modulator therapy)</td>
<td>• Patients who are unable to come for weekly appointment</td>
</tr>
<tr>
<td>• Kidney disease or renal transplant candidates</td>
<td>• Any significant abnormal liver function test</td>
</tr>
<tr>
<td>• Patients who are willing to come for weekly appointments; preferably same day and same time of the week</td>
<td>• Patients who decline this therapy</td>
</tr>
</tbody>
</table>

- Those who are not candidates for DOT regimen were evaluated for conventional nine months INH therapy.
Nurse Protocol – 3HP Regimen

- Initial Assessment by Provider, then referred to Nurse.
- ID nurse:
  - Reviews treatment plan
  - Determine treatment days and time
  - Order meds (INH 900 mg + rifapentine 900 mg) for 12 weeks from Inpatient Pharmacy. Medications stored in clinic under patient’s name.
- Weekly treatment visits:
  - No charge for meds or nurse visit
  - **No incentives given to patients**
  - Medications given and patient observed for few minutes
  - Any side effects and progress assessed
  - Orders necessary labs
- **Nurse calls patients if they are late for appointment or no show**
- Final Assessment by provider: Information reviewed and letter of completion provided.
What a Patient Needs to Know

Is this treatment method right for me?

☑️ I agree to a blood draw prior to start of treatment
☑️ I agree to VIDEO and CLINIC appointments with Nurse on the same day for twelve weeks
☑️ I agree to monthly blood draws to monitor liver function during treatment
☑️ I agree to appointments with Physician during treatment
☑️ I agree to avoid pregnancy while on treatment
☑️ I agree to avoid alcohol use during treatment
Infectious Disease 12 Week Directly Observed Therapy (DOT) Video Visits Pilot

Meet with your provider outside the exam room

Your Friends Will Be Jealous
We’re piloting the 12 Week Infectious Disease Directly Observed Therapy (DOT) program with a new form of health care visits to simplify your life.

For your next appointment, ask us how the 10-minute video visit process works. This visit does not have a co-pay.

All you need is a device with a front-facing camera. For smartphones, just download a free app before your visit.
VIDEO + CLINIC Program
Initiated in 10/2014 as Nurse visits

• Patient must have the following:
  • Access to a computer, smartphone, or tablet
  • Be active on KP.ORG – HIPAA compliant
  • Be willing to pick up an 8-week supply of meds. RX copay may be applicable

• To get started:
  • Install the VIDYO app on device
  • Pick up medication as ordered
  • Open e-mails with steps to follow for video visit
  • Once setup is complete, click on guest link five minutes before appointment (apt) time.
  • Click on “Join Conference”
  • Enter name, enter PIN # [last 4 digits of MR#]. Need help getting started? Check out the Vidyo Knowledge Center: http://www.vidyo.com/knowledge-center
  • Consent obtained by nurse prior to starting appointment each time

• Since start of the program: we treated 75 pts with 3HP regimen – 14 (18.6%) of them were video visits
3HP Regimen

- 154 patients
  - Completed treatment: 136 (88.31%)
  - RX stopped by patient: 3 (1.9%)
  - RX stopped due to pregnancy: 2 (1.29%)
  - Discontinued due to side effects: 13 (8.44%)

Video Program: 14
INH Treatment

INH
69 patients

Completed treatment
37 (53.7%)

On treatment
16 (23.1%)

Lost for follow-up
8 (11.6%)

Discontinued
8 (11.6%)
## Treatment Rates

### Treatment Completion and Side Effect Rates

<table>
<thead>
<tr>
<th>Category</th>
<th>3HP</th>
<th>INH (Outcome available:53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed (success rate to date)</td>
<td>136 (88.3%)</td>
<td>37 (69.8%)</td>
</tr>
<tr>
<td>Discontinued</td>
<td>18 (11.6%)</td>
<td>16 (30.2%)</td>
</tr>
<tr>
<td>Adverse Effects</td>
<td>13* (8.4%)</td>
<td>8*** (15.1%)</td>
</tr>
<tr>
<td>Stopped for other reasons</td>
<td>5** (3.2%)</td>
<td>8**** (15.1%)</td>
</tr>
</tbody>
</table>

* N/V, Fever, Rash, Myalgia, Abnormal LFT's
** Lost insurance, Pregnancy, Work Schedule
*** Abnormal LFT's, Neuropathy, Dizziness, Fatigue
**** Death in one month due to unrelated cause, seven others non compliant
Diabetes Population by Ethnicity by HgA1c
Census as of December 2015

Total DM Population - Hispanic/Latin
N = 8475
- A1c<=7 42%
- A1c<8 24%
- A1c=8 & 9 12%
- A1c Null 6%
- A1c>=9 16%

Total DM Population - Asian
N = 3593
- A1c<=7 49%
- A1c<8 27%
- A1c Null 5%
- A1c=8 & 9 10%
- A1c>=9 9%

Total DM Population - Filipino
N = 202
- A1c<=7 53%
- A1c<8 23%
- A1c Null 6%
- A1c=8 & 9 10%
- A1c>=9 8%
Our Future Plans

- Increase LTBI testing in our high risk members to prevent future TB disease cases
- Collaborated with population care team in our hospital to identify patients with high HbA1c > 8, offer IGRA test: 3100 (Hispanic, Asian and Filipino)
- Patients with positive IGRA test will be evaluated for LTBI treatment
- Share our Best Practice with others who are interested in starting similar program
**LTBI treatment: Conclusion**

- 3 HP regimen x 12 weeks is well accepted and well tolerated by our patients, and led to a high success rate
- A dedicated team of providers and nursing staff is required to have a successful DOT program in any clinic
- 3 HP regimen is preferred because of its short duration and monitored compliance as opposed to INH where compliance is based on patient’s history
- 3 HP regimen would be a preferred regimen for those patients who are waiting to start immune modulator therapy for certain diagnoses
ID Team

- Dr. Elizabeth Hudson
- Dr. Bhavani Rao
- Dr. Stan Shapiro
- Dora Acosta, LVN
- Damaris Retana, LVN
- Andrea Sandoval, LVN
QUESTIONS?

THANK YOU!!!