TB Nurse Assessment

Veronica Dominguez, RN, BSN
March 18, 2015

TB Nurse Case Management
March 17-19, 2015
San Antonio, Texas

Veronica Dominguez, RN, BSN has the following disclosures to make:

• No conflict of interests
• No relevant financial relationships with any commercial companies pertaining to this educational activity
Objectives

- Conduct a thorough nurse assessment to develop care plans and make community referrals for successful completion
  - Gathering information & Collecting Data
  - Medical History
  - Psychosocial History
  - Environmental Assessment
  - Medical and Population Risk Factors
  - TB History
**Case Management**

- Establish rapport with patient and emphasize
  - Benefits of treatment
  - Importance of adherence to treatment
  - Possible adverse side effects of regimen

Adherence

- Non-adherence is a major problem of TB Control
- Use case management and directly observed therapy (DOT) to ensure patients complete treatment
Gathering Data

- The Case Manager should conduct a face to face interview with the patient in efforts to develop a plan of care
  - Interviews should be conducted <1 business day of reporting an infectious person
  - Interviews should be conducted <3 business days for all others
- The purpose of the initial visit is not only for development of a treatment plan, but also to physically view the patient
- The initial visit will give us clue to just how ill our patient’s are and possible cues to the level of transmission
  - Frequency and quality of cough
  - Pt appearance i.e., thin, frail
  - People who reside in the home with the patient

Considering the Environment

- The interview process is lengthy. Ensure that the patient is comfortable.
- Great influence how complete and informative the patient’s answers will be
- The better you understand your patient, the better your treatment plan = good compliance
Building Rapport

- Building Rapport is essential in obtaining needed social and medical information from clients in order to develop a treatment plan specific to that patient.
- Although initial interviews may be conducted by the contact investigator, NCM should be prepared to conduct initial interview/assessment if called upon.
- During the initial interview/assessment confidentiality and privacy should be discussed and is critical in establishing rapport.
- If your approach is more like an interrogation, the patient will be closed and unresponsive to your questions.
- If your tone is judgmental, there is a chance that the patient will disregard your advice and instructions.

Keep an Open Mind
### Type of Symptoms

<table>
<thead>
<tr>
<th>PULMONARY</th>
<th>SYSTEMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Productive, prolonged cough</td>
<td>- Fever, Chills</td>
</tr>
<tr>
<td>- SOB</td>
<td>- Night sweats</td>
</tr>
<tr>
<td>- Chest Pain</td>
<td>- Anorexia</td>
</tr>
<tr>
<td>- Hoarseness</td>
<td>- Fatigue</td>
</tr>
<tr>
<td>- Hemoptysis</td>
<td>- Decreased LOC</td>
</tr>
<tr>
<td>- Fever, chills, night sweats</td>
<td>- Headache</td>
</tr>
<tr>
<td></td>
<td>- Weight loss</td>
</tr>
<tr>
<td></td>
<td>- Enlarged/Painful Lymph nodes</td>
</tr>
<tr>
<td></td>
<td>- Bone pain /Pain</td>
</tr>
</tbody>
</table>

### History of Signs and Symptoms

- It’s important to gather a chronological history of presenting signs and symptoms
  - Most patients will have difficulty remembering when symptoms began
- Assist patients by referring back to important dates and times
  - Christmas, Thanksgiving, Birthday, Birth of a Baby
  - These cues may prompt patient memory and give us more accurate dates as when symptoms began
  - Important in determining infectious period and conducting contact investigations
Assessing Symptoms

- Determine if Patient has Cough
  - Productive/Non-Productive
  - Duration
  - Cough Associated with pain/SOB
- Determine if the Patient has hemoptysis
  - Color
  - Quality
  - Amount
  - Discern hematemesis/hemoptysis

Where is it from?

- **GI TRACT**
  - Dark red or brown
  - In clumps
  - Mixed with food
  - Acidic pH
  - Stomachache, abdominal discomfort
  - Nausea, retching before and after episode

- **RESPIRATORY TRACT**
  - Foamy, runny
  - Mixed with mucus
  - Alkaline pH
  - Chest pain, warmth or gurgling over the chest
  - Persistent cough
**TB Symptoms**

- Determine if the Patient has Night Sweats
  - Duration
  - How Often
  - Has patient soaked Sheets
- Determined if Patient has had weight loss
  - Duration
  - How Much
  - Nausea/Vomiting
  - Access to food

**Infectiousness**

- Patients should be considered infectious if they
  - Are coughing
  - Have sputum smears positive for AFB and they
    - Are not receiving treatment
    - Have just started therapy, or
    - Have a poor clinical response to therapy
Determine the Need for Isolation

- Patients suspected or confirmed to have TB should be placed in isolation until their infectiousness has been determined.
- The need for isolation is generally determined before the initial interview.
- During interview assess patient for appropriate voluntary isolation measures.
- Document patient’s adherence and understanding of the isolation measures.

Infectiousness

- Infectiousness is directly related to the number of tubercle bacilli a TB patient expels in the air.
- The number of tubercle bacilli expelled by the TB patient depends on the following:
  - Cough
  - Presence of Cavities
  - Positive smear/culture
  - Site of disease
  - Cough etiquette
  - Treatment
  - Cough Inducing Procedures
Non-Infectiousness

To be considered non-infectious, the patient must meet all of the following criteria:
- Are on adequate therapy
- Have had a significant response to therapy, and
- Have 3 consecutive negative sputum smears

Radiology

- Gather all radiology reports
  - X-rays, CT-Scans, Pet Scans, MRI's
- Reports show cavities? Infiltrates? Scarring?
- Films for comparison?
**Prior Treatment History**

- Determine if the patient has had previous treatment for TB or latent infection
  - If so, when? Was treatment within the past 2 years
    - Relapse/re-activation
  - Where
    - United States, Foreign Country
  - How long?
    - 6, 9, 12, 18, 24 months
  - What drugs?
  - If treated for TB, what type?
    - Pulmonary, Extrapulmonary, clinical case
  - History of drug resistance; MDR?
  - Supporting Documentation

**Past Treatment for LTBI**

- If patient has a prior treatment of LTBI
  - Determine When, Where, How Long
- Known Exposure
  - Contact to a Known TB Case
  - Foreign Travel
- Determine Drugs Used to treat LTBI
  - Isoniazid, Rifampin, Other Drug Combinations
- Compliance
Medical History

- Important to obtain as much medical data as possible

- Prior Medical records from the Patient’s PCP or other physicians may be helpful
  - Hospital Admission Notes and Discharge Summary

- The more you know, the better you can assist the patient and create a solid plan of care

- Important to obtain a release of information during the initial assessment

Nurse Assessment
Co-Morbidities

- Performing a thorough assessment will help identify other medical conditions that may hinder TB treatment
- Important factor to determine
  - HIV status
    - If HIV+: diagnosis data, CD4 count, viral load, medications
  - History of steroid or TNF-α antagonist use
    - Remicade
    - Enbrel
    - Humira

Medical Problems

- Diabetes
  - Hgb A1C
  - Controlled?
- ESRD
  - Dialysis
    - Schedule
- Other immunosuppressed or respiratory disease
- Liver Disease
**HIV/TB**

- During the initial assessment it is very important to obtain patient’s HIV status and risk for factors for the disease.

- If patient is HIV positive:
  - Determine date/year diagnosed
  - CD4 count
  - VL
  - Determine if patient is taking ART

- Patients taking PI's for HIV will require adjustment in TB therapy:
  - Rifabutin substituted for Rifampin
  - *Rifabutin 150 mg TIW*

**Diabetes**

- During the initial assessment it is very important to determine if the patient has Diabetes.

- If the Patient has Diabetes:
  - Determine How Long
  - Treatment
  - Control
  - Any complications related to DM

- Determine Current Diabetes Medications:
  - TB medications may affect the manner in which medications are metabolized.
**Diabetes Complications**

- **Diabetic neuropathy** at baseline complicates therapy due to INH-related neuropathy
  - Baseline assessment of neuropathy
  - Vitamin B6 (pyridoxine) to all diabetics on INH or ethionamide
- **Diabetic retinopathy** at baseline complicates therapy due to Ethambutol related visual changes
  - Baseline assessment of vision
  - Followed by monthly assessment of vision

**TB and Diabetes Treatment Issues**

- Diabetics have an increased risk of hepatotoxicity
  - Multiple medications
  - Fatty liver
- Monitoring and education are very important
  - Baseline and monthly liver enzymes
- Educate regarding risk of liver toxicity, symptoms to watch for, and what to do should these occur
  - Contact provider
  - Hold TB medications until liver injury excluded
Hyperglycemia in Patients with TB

- Blood glucose control may worsen while patients are taking Rifampin
  - Rifampin augments intestinal absorption of glucose
  - Does so in both diabetics and non-diabetics
  - Affects many classes of diabetic medications

- Infections impair glucose tolerance early in disease in both diabetics and non-diabetics
  - Independent of Rifampin, infection can lead to poor glucose control

Liver Disease

- Determine if Patient has Liver disease
  - Hepatitis A, B, C
  - Cirrhosis
  - Other Liver Injury
- Determine How long the patient has had liver disease
  - Treatment
- Determine ETOH use
**TB/Liver Disease**

- Liver disease can complicate the course of TB treatment as many TB medications are metabolized by the liver.
- Base line monitoring and medications adjustments may be necessary.
- Monthly monitoring of liver transaminases indicated.
  - May be more often based on the severity of liver disease.

**Steroid/TNF-α**

- Determine if patient is or has been on TNF-alpha therapy.
  - How Long
- Determine the indication for TNF-alpha use.
- Evaluate Aggressively.
**Current agents**

- Infliximab (Remicade)
- Etanercept (Enbrel)
- Adalimumab (Humira)
- Certolizumab (Cimzia)

- Treatment with these associated with the development of active TB, often disseminated with aggressive progression
- TB reported more frequently than other opportunistic infections (OI)

---

**Warning: Risk Of Infections - Infliximab**

- Tuberculosis (frequently disseminated or Extrapulmonary at clinical presentation), ...and other opportunistic infections have been observed in patients receiving Remicade some of these infections have been fatal.

- Patients should be evaluated for LTBI with a TST
- Treatment of LTBI should be initiated prior to therapy with Remicade
- SEE WARNINGS

  - PDR 2004
Chronic Kidney Disease

- Determine if Patient has CKD
  - Dx date/year
  - Dialysis schedule
- Symptoms for TB often overlooked in this population
- Extra pulmonary TB
  - More common in dialysis patients
    - Any other site possible, evaluate if abnormal
    - Ethambutol/PZA requires dose adjustment
      - Ethambutol 15-25mg/kg po thrice weekly
      - PZA 25-35mg/kg po thrice weekly
- All doses should be given AFTER DIALYSIS

Malnutrition and TB

- Malnutrition weakens immune system
  - Increase susceptibility to infection
  - Infection leads to nutritional stress
  - Weight loss
    - Increasing the likelihood of progression of LTBI to TB disease.
- TB affects protein metabolism and nutritional status
- Adequate nutrition is essential to good treatment outcomes
**Nutritional Teaching TIPS!**

- Consider prolonging therapy for patients >10% underweight.
- Calculate BMI and IBW %
- Monitor weight
- Weekly in underweight patients.
- Once stable, monitor monthly
- Ideally patients should gain 1 lb/week
- Provide food resources
- Recommend iron-rich food intake if client is anemic
- Encourage the patient to monitor his/her weight.

**Summary**

- The Case Manager should conduct a face to face interview with the patient in efforts to develop a plan of care
  - Interviews should be conducted <1 business day of reporting an infectious person
  - Interviews should be conducted <3 business days for all others
- The purpose of the initial visit is not only for assessment and development of a treatment plan, but also to physically view the patient
- The initial visit will give us clue to just how ill our patient’s are and possible cues to the level of transmission
  - Frequency and quality of cough
  - Pt appearance i.e., thin, frail
  - People who reside in the home with the patient
- It’s important to build rapport and ensure the confidentiality of patient information at all times
Summary

- Obtain a thorough medical history and obtain pertinent hospital records to assist in developing a treatment plan tailored to the patient.

- Identification of co-morbid conditions is essential in developing a plan of care because co-morbid conditions can hinder TB treatment.

- Assessment is ongoing and dynamic and should be continuous throughout the course of the patient’s treatment.

Questions

Remember:

Nurses are like icebergs. At any one time you are only seeing about 1/5 of what they are actually doing.

Thank you!
References

- Centers for Disease Control and Prevention Division of Tuberculosis Elimination Self-Study Modules on Tuberculosis [http://www.cdc.gov/ncidod/sci/](http://www.cdc.gov/ncidod/sci/)
- Texas Department of State Health Services. [http://www.dshs.state.tx.us/idcu/disease/tb/forms/](http://www.dshs.state.tx.us/idcu/disease/tb/forms/)
- Secrest, Thomas, *Guide to Taking a Patient History*. March 27, 2009