TB Nurse Case Management  
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Psychosocial Factors That Affect  
TB Treatment  
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• No conflict of interests

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Agenda

• Psychosocial factors of TB

• Case studies of tuberculosis and mental illness

The Casual Relationships between Mental Disorders and TB are Complex

• The literature indicates psychiatric comorbidity before and after TB onset
• Severe mental disorders are associated with
  – High risk of TB acquisition and transmission
  – Poor adherence to anti-TB treatment
• Diagnosis of TB increases the risk of psychological issues
  – Isolation, stigma, helplessness

TB research and treatment:2013;Article ID 489865
Risk of Mental Illness in TB Patients

• Up to 70% of TB patients have mental illness
• A study in Peru found rates of depression and anxiety at 52.2% and 8.7% among MDRTB patients
• Prevalence of depression correlates with
  – Disease severity and duration
• Co-infection with HIV may increase the risk of depression by up to 70%

General hospital Psychiatry; 2013; 35:398-406

Psychiatric Conditions Arising After TB Diagnosis

• Adjustment disorder
• Mood disorder, major depression
• Anxiety disorders, PTSD
• Delirium
• Personality changes
Why is TB so Prevalent Among those with Mental Illness?

- TB and mental illness have common associations
  - Homelessness
  - Alcohol/substance abuse/tobacco
  - Poor health care access

General hospital Psychiatry; 2013; 35:398-406

Depression and Anxiety are Common in TB Patients

- Life disruption leads to emotional difficulties
- Symptoms of TB and depression overlap
  - Weakness, fatigue, loss of appetite and energy
- TB medications can cause agitation, confusion, depression and psychosis
- Depression can lead to further disability and interfere with treatment
Psychotic disorders and Life Expectancy

- Psychotic disorders have been associated with double the mortality rate of the general population and a shortening of life expectancy by up to 20 years.
- The WHS performed a standardized interview regarding the health and behavior of over 200K people.
  - Patients with a known psychotic disorder had an OR of 4.72 of having TB and 2.95 of having HIV/AIDS.
- Sedentary life, smoking, bad diets, substance abuse, poor access to health care have been associated.

World psychiatry 2013;12:251-257

TB is a Unique and Painful Experience

- Research has shown that people affected by TB are more likely to develop mental and psychological problems than people not affected by the disease.
- People believe that TB is always an interruption in life.
  - Physically, psychologically, economically and socially.
- After the initial shock from diagnosis there is a period of denial followed by
  - Resignation and depression.

TB research and treatment;2013;Article ID 48986
Psychological Factors of TB

- Fear, shock, denial, anger, guilt, stigma and shame are typical feelings after diagnosis
- Perception as an incurable disease
  - Lead to denial and treatment rejection
- Fear/guilt of infecting family members

Psychosocial Factors of TB

- Isolation, one of the most difficult aspects of the disease
  - Feeling lonely, confined, abandoned
  - Shame of needing to wear a mask
  - Feeling dirty “like a leper”
- Isolation from family
  - Myths: Separated dishes, clothes, laundry
Rachel, a TB Photovoice participant: “Burning this mask was very important to me. I wore it for several months and it was very painful. My peers didn’t know what my face and smile looked like. When I burned the mask, it was like getting rid of the stigma (associated with Tuberculosis). I felt free.”


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Stigma and Discrimination

- Low self esteem and shame
- Diminished marriage prospects
  - Women undesirable as spouses
  - Husbands took second wives, divorce
- Limited social support
- Unfriendly health care workers
  - feeling “threatened, uncomfortable, unwelcome and unwilling to return”

Socio-Economic Factors

• 31-50% of patients have financial difficulties
• 11% of children with TB affected parents abandoned schooling and 8% took up work
• Present late in the disease when cure is less likely and more costly
• Choose between continuing treatment and working

Chang B. Quality of life in TB: A review of English literature

TB Patients are Poor, Vulnerable, Excluded, and Stigmatized

• Also carrying additional burden of MDR-TB and HIV
• The last thing they need from the health system is to be referred to in a manner that is
  - Disempowering and detrimental to their acceptance in society

R. Zachariah IJTBLD 16(6):714-717 2012
Values that Need to Be Embraced as Core Aspects of TB Programs in the New Millennium

• TB services are not just about science of treatment, they are about something more fundamental:

  – Dignity, social fairness, social justice and a willingness to serve

Failure to Address Psychosocial Needs Leads to:

• Decrease adherence to treatment
• Ongoing transmission
• Higher fatality rates

• Addressing psychosocial factors and mental health needs is necessary to ensure positive treatment outcomes
Case Studies of Tuberculosis and Mental Illness

Agenda: Four Case Studies of Tuberculosis and Mental Illness

- #1 Post partum female with TB, substance abuse and bipolar disorder
- #2 Pt. with bipolar and antisocial personality disorders, violent behavior
- #3 Pt. with schizophrenia and TB who refused TB medications, blood work, and sputum samples
- #4 Pt. diagnosed with TB while on court order at the mental hospital for schizophrenia
Case # 1: Medical History

- 26 y/o Caucasian, homeless female with history of bipolar disorder off psychotropic medications for 2 years
  - Reported episodes of:
    - Depression, tearful, low energy alternating with
      - Spending money
      - Irrational optimism
    - Used crack, cocaine, ETOH every day for 18 months prior to hospitalization at TCID
- Delivered a baby prior to TCID admission

Other Information from Medical History

- Complained of fever, cough, anorexia and weight loss during last trimester of pregnancy
- CXR post partum: RUL cavitary infiltrates
- Diagnosed with pan-susceptible TB few days after delivery
Reason for TCID Admission

• Admitted to TCID for TB treatment in the setting of
  – Homelessness
  – Untreated mental illness
  – Substance abuse

Diagnosis and Treatment

Diagnosed with bipolar disorder, untreated

Required psychiatric evaluations and medication adjustments throughout hospitalization

Started on depakote ER as mood stabilizer to prevent mania/depression

Mood swings resolved, gained 40 pounds, good adherence to TB and psych medications, involved in AA completed TB treatment at TCID
What is Bipolar Disorder?

- Mood disorder characterized by mood swings, which have a tendency to recur and subside spontaneously
  - Can cycle from mania to deep depression

- Cause unknown
  - Affects men and women equally

- Triggers for mania
  - Life changes such as childbirth
  - Medications: Antidepressants and steroids
  - Recreational drug use and insomnia

Bipolar Disorder Screening
Black Dog Institute’s Self-Test

- Have you been too depressed to work, or only able to work with difficulty?
- Do you experience ‘ups’ as well as ‘downs’ ‘with’ your mood?
- Are your ups ‘wired’ or ‘hyper’ –more than when you are just happy?
  - Seek referral if patient answer “yes” to all 3 questions

Symptoms of Manic Phase

• Excessive irresponsible behavior
• Poor judgment, insomnia, irritability, elevated mood, talking a lot
• Excessive involvement in pleasurable activities with painful consequences
  – Spending
  – Unsafe sex with multiple partners
  – Alcohol and drugs

Treatment and Complications

• Mood-stabilizing medications
  – Valproic acid, lithium, carbamazepine
  Effective for
    Manic and depressive phases
    Effective in preventing recurrence
• Patients often stop medications after feeling better
• High risk of
  – Substance abuse, suicide,
  – Disruption of relationships, work and finance
Association Between Alcohol Use and TB

- Strong association between heavy ETOH use and TB
  - ETOH weakens the immune system which increases risk of TB

- Heavy ETOH use has been linked to
  - Higher reinfection rate
  - Lack of treatment adherence
  - Development of drug resistant TB

Substance and Drug Abuse
CAGE Questions

- Have you ever felt you should cut down on your drinking
- Have people annoyed you by criticizing your drinking or drug use?
- Have you ever felt bad or guilty about your drinking?
- Have you ever had a drink or used drugs first thin in the morning, to steady your nerves, or to get rid of a hangover?

Case #2: Medical History

- 38 y/o male with History of cirrhosis, hepatitis B and C, AIDS (CD4:442, HIV RNA 130K)
- Substance abuse
  - Started at 10 y/o as daily user of marijuana, speed, IV cocaine
  - Tobacco: 2 packs a day
- Legal
  - 18 years in penitentiary for 9-10 robberies
- Post traumatic stress
  - Physical and emotional abuse by mother and brothers
  - Sexual: “Mom gave me off to a gay drug dealer”
  - Worked as a prostitute in Las Vegas at 15 years of age
Complications During Hospitalization

• Admitted to TCID for TB treatment under court order

• Patient became increasingly agitated over time with inpatient treatment
  – Refused to talk to psychiatrist
  – Refused Seroquel, but took all TB medications
  – Became increasingly combative, violent, and disruptive with other patients and staff

• Refused to sleep for four days and discussed escape plans

Escalating Aggressive Behavior

• Hit walls, destroyed four glass monitors and six alcohol dispensers
• Threatened and cursed staff and patients
  – Pushed staff members and slapped patients
  – Everyone was horrified
• Kept insisting he was not crazy
Other Complications During Hospitalization

- Patient attempted to escape by jumping from the second floor (about 15 ft)
  - Patient ran away, but security caught him
  - Minutes later, he assaulted a patient by removing his glasses and crushing them under his feet

Diagnosis and Management

- Bipolar, antisocial and borderline personality disorders, uncontrolled
  - Placed on 1:1 supervision
  - Contacted security, police, and San Antonio State Hospital (SASH) director

- Patient was sent on furlough to mental hospital for 2 weeks
  - Required physical restraints at Psych Hospital, IM medication was given
Returned to TCID after 2 weeks at SASH

• Wrote an apology letter
  – Was sorry for his bad behavior

• Apologized to patient for breaking his glasses and promised to replace them

• Behavior was appropriate and respectful

• Took his TB and psychotropic medication

Antisocial Personality Disorder (Sociopathy)

• A chronic mental illness in which a person’s way of thinking, perceiving situations and relating to others are abnormal and destructive

• Symptoms
  – Recurring difficulties with the law
  – Aggressive or violent behavior
  – Persistent lying, social isolation
  – Lack of remorse about harming others
  – Drug and alcohol problems
  – Often refuse treatment
Treatment

- Psychotherapy
- Stress and anger management skills
- No specific medications
- Can treat associate symptoms
  - Mood stabilizers
  - Antidepressants
  - Anti-anxiety
  - Antipsychotic

Case #3: Medical History

- 55 y/o white male with schizophrenia
- Residing at boarding home in Medina County, site of a recent TB outbreak
- 70 pts newly diagnosed with LTBI, 4 TB suspects, 2 active cases (treated at TCID)
- Positive TST, cavitary infiltrates on CXR, sputum AFB smears and cultures were positive for *Mtb*, pan susceptible
Medical History

- Started on RIPE as outpatient
- Refused ALL TB medication doses for 6 weeks as outpatient
- Admitted to TCID under court order for TB treatment due to poor compliance

Mental Status Assessment

- Very delusional
  - False fixed beliefs
- Types of Delusions
  - Grandiose
    Having special powers
  - Paranoid
    Being poisoned by medications
    People stealing his ideas and working with CIA to kill him
Psychiatric Diagnosis and Treatment

- Chronic schizophrenia with psychosis
- Unlikely to become substantially less psychotic given long illness and poor compliance issues
- Required 3 psychiatric evaluations during 1st month at TCID with medication adjustments

Hospital Course: Complications

- Refused multiple times
  - CXR - Medications
  - Blood draws - Sputum collection
- Patient stated:
  - “You are killing me with so many pills”
  - “I do not have TB”
  - “I will get bruises, gangrene if I give blood”
  - “I will get lung cancer and brain cancer if I get a CXR”
  - “You are putting LSD on the food”
TB Treatment Complications

- Refused monthly blood work for 2 months
  After taking rifampin, PZA, INH for 8 weeks
  AST, ALT were 14 times above normal

- Was treated with a liver friendly regimen
  - IM amikacin, levofloxacin and ethambutol

- Never had a CXR done during hospitalization at TCID
  - Refused monthly CXR

Complications of TB Treatment

- Nurses offered TB meds multiple times until he finally took them

- Refused sputum samples the first 3 months
  - Prolonged AFB isolation

- Had to call security on several occasions
  - Before blood draws
  - IM injections to support staff
TB Treatment Outcome

• With time, patient became more compliant with TB medications and procedures
  – Gave sputum and blood samples

• Remained delusional throughout hospitalization

• Completed inpatient TB treatment successfully

What is Schizophrenia?

• Chronic, severe mental disorder that affects the ability to
  – Distinguish fantasy from reality
  – Have normal emotional response
  – Leads to long term deterioration in functional capacity

• Interferes with the person’s ability to
  – Manage emotions and make decisions

• Cause unknown
  – Affects men and women equally
  – Begins in teen years or early childhood
Symptoms of Schizophrenia

- Problems with thinking, emotions, and behavior
  - Bizarre behavior
  - Hallucinations
  - Delusions
  - Flat affect
  - Isolation

- Decrease in ability to begin, plan, and maintain work

What are Delusions?

- Fixed false beliefs held with high level of conviction
  
  “My wife is poisoning me with the food”

  “The aliens took my brain”
Hallucinations

• Misperceptions **without** any external sensory stimuli
  – Alone in the room and you see a ghost
  – No external sounds but you hear something
  – Nothing in the air but you smell something
  – Nothing in your mouth and you taste something
  – Nothing on your skin but you feel something

Types of Hallucinations

• Auditory = Psychotic disorder
  – 2/3 of schizophrenic hallucinations

• Visual = Drugs
  – 1/3 of schizophrenic hallucinations

• Tactile = Drugs
  – Cocaine intoxication
  – Alcohol detoxification

• Olfactory = Seizure disorder
  – Usually foul smelling things like burning rubber
Diagnosis and Treatment

• No laboratory test for schizophrenia

• Based on psychiatric evaluation of patient

• Antipsychotics are most effective treatment
  – Side effects:
    Dizziness, insomnia, tremor, weight gain
    Tardive dyskinesia

Schizophrenia
Case # 4: INH Resistant TB

• 27 y/o male with schizophrenia
  – History of positive TST and QuantiFERON, normal CXR in 2009 while in jail, no documentation of LTBI Rx
• Developed cough while at SASH
  – CXR with LUL cavity
  – AFB smears x 3 neg
• Despite abnormal CXR, diagnosed with LTBI
  – Started on INH monotherapy
• Two weeks later, repeat CXR
  – Worsening thick walled cavity
• Patient transferred to UTHSCSA for evaluation
TB Diagnosis

• Admission BAL with granuloma but AFB smear neg
  – Started on RIPE immediately after BAL
• Two weeks later, admitted to TCID for culture positive *Mtb*
• Continued having hallucinations
  – Risperidone dose was increased
• Potential drug-drug interactions between rifampin and psychotropic medications
  – Consider increasing dose of psychotropic medications or change rifampin to rifabutin to decrease drug interaction
Rifampin, a Cytochrome P450 3A Inducer, Decreases Plasma Concentration of Antipsychotic Risperidone in Healthy Volunteers

- Co-administration of risperidone and rifampin was associated with a significant decrease in risperidone maximal concentration (Cmax) by 50%


http://www.heartlandntbc.org/products/rifamycins_and_psychotropic_drugs.pdf
Conclusions

• Mental illness is very prevalent amongst patients with TB and visa versa
• Failure to diagnose and treat mental illness in TB patients leads to poor adherence and TB treatment failure
• Mental illness leads to unemployment, substance abuse, homelessness HIV and TB
• Be aware of drug- drug interactions between rifampin and psychotropic medications
• TB can cause depression and as providers we can help patients by promoting a supportive environment and treating them with compassion and respect

Mental Health Resources

• NAMI: Support Organizations:
  • http://www.nami.org/Template.cfm?section=Find_Support
  • National Alliance on Mental Illness: http://www.nami.org/
• 12 Step Program: http://www.12step.org/
• CDC: Substance Abuse Treatment (for HIV Infected Persons): http://www.cdc.gov/pwud/substance-treatment.html
• Centers for Disease Control and Prevention, Persons Who Use Drugs: http://www.cdc.gov/pwud/Default.html
• Substance Abuse and Mental Health Services Administration (SAMHSA): http://www.samhsa.gov/
• Substance Abuse and Mental Health Services Administration (SAMHSA): Substance Abuse Treatment Facility Locator:
  • http://dasis3.samhsa.gov/
Recommended Movies

• On the Lake
  – Life and love in a distant place tells the true story of the TB epidemic in America in the 1900s
  – Touches the emotional impact of TB

• Infinity
  – A love affair a physicist and a beautiful woman with TB in 1941

• A Beautiful Mind
  – The price patients with schizophrenia pay and the toll it takes on their families

Questions?
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