Recognizing Mental Illness in the Patient with TB
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Agenda

• Psychosocial factors of TB

• Case studies of tuberculosis and mental illness

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
Relationships Between Mental Illness and TB are Complex

- Patients With Mental illness have
  - High risk of TB acquisition and transmission
  - Poor adherence to anti-TB treatment

- Diagnosis of TB increases the risk of
  - Mental illness

Psychiatric Conditions Arising After TB Diagnosis

- Adjustment disorder
- Mood disorder, major depression
- Anxiety disorders, PTSD
- Delirium
- Personality changes
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

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 shortening of life expectancy by up to 20 years.
- World Health Service 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.
- Patients believe that TB is always an interruption in life.
  - Physically, psychologically, economically and socially.
- After the initial shock from diagnosis the 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

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

Chang B. Quality of life in TB: A review of English literature
Rachel, a TB Photo voice 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.”

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 IJBLD 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

R. Zachariah IJTBLD 16(6):714-717 2012

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
Patients with Tuberculosis and Mental Illness

Agenda: Four Patients with 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
Patient # 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
• Gained 40 pounds
• Good adherence to TB and psych medications,
• Involved in AA
• Completed TB treatment at TCID
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

BMC Public Health 2009, 9:450
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?


Patient #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

• Admitted to TCID June 15, 2011 for treatment of PTB, non cavitary pan susceptible under court order
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

Patient #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 had TB symptoms, 2 with active TB (treated at TCID)
• Positive TST, cavitary infiltrates on CXR, sputum AFB smears and cultures were positive for *Mtb*, 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

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 adulthood
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

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
- Auditory = Psychotic
  - 2/3 of schizophrenic hallucinations
- Visual = Drugs
  - 1/3 of schizophrenic hallucinations
- Tactile = Drugs
  - Cocaine intoxication
  - Alcohol detoxification
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
Patient # 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*, INH resistant
• 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%

Journal Clin Pharmacy and Therapeutics
(2007) 32, 161-167

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

- National Alliance on Mental Illness: http://www.nami.org/
- 12 Step Program: http://www.12step.org/
- 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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