



# MEDICAL PSYCHIATRY

For PRIMARY CARE – FREQUENT TOPICS

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# ASSOCIATIONS

- No affiliations
- No Grants
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# TOPICS

QUICK SCREEN (BEDSIDE) COGNITIONS

SUBSTANCE ABUSE

CHRONIC PAIN

INSOMNIA

SLEEP WAKE DISORDERS

AUTISTIC SPECTRUM

CARDIOVASCULAR

# QUICK SCREEN INSTRUMENTS

Aging population & rapidly growing – evaluate cognition stability

Represents a baseline to start treatment and can be information to convey to caretakers and family

In past years Benadryl and or benzodiazepines used more frequently in elderly but realize this is confusing to the patient and effect may linger (For Example)

# CLOCK DRAWING

- Two types of this bedside test ( both are free) the standard and the executive instrument
- Standard – the circle for the clock to be drawn within is already on the paper
- Executive patient asked to draw the circle in addition to other directions
- This screen can be all one needs to continue the task caring for this patient
- The screen can be a determinant in whether to send for more extensive neuropsychological testing that is much more involved and detailed as to area in brain that is most effected for diagnosis and prognosis. This is the testing to verify brain dysfunction MRI, etc. only displays architecture not function.

# CLOCK DRAWING

- Patient given a blank sheet of paper and pen or pencil. Alert them to listen as only give directions once.
- They are to draw a circle for a clock, place numbers, and have the clock hands display 15 past 2.
- Broad idea of visuospatial process, semantic memory, executive function, language comprehension, sustained attention, working memory and motor function

# CLOCK DRAWING

- Semantic memory – long term memory involving the capacity to recall words, concepts / numbers. If lost they struggle with everyday knowledge of objects in the world and problems with communication
- Visuospatial process – ability to perceive, analyze, synthesize, manipulate and transform visual patterns and images
- Executive function – ability to take in material allow and guide appropriate behavior by allowing for adequate modification and freedom from distracting influence and impulsive or habitual responses when not conceptually appropriate



# CLOCK DRAWING

- Language comprehension by understanding the directions for the drawing
- Sustained attention maintaining appropriate focus to completion
- Working memory carrying out the task providing all drawing components required
- Motor function make a readable clock and observe for any intention tremor or other movement issues
- Frontal executive impairment more likely if cannot accurately draw clock
- The task requires intact planning, organization, response inhibition, working memory as well as other executive functions
- In addition cannot beat the price of the equipment to give the test!



# MINI MENTAL SCREEN

- This quick test has four main components – appearance, behavior, cognition, thought process
- Over view of the main content and it covers different thought abilities and some same from different approach
- Orientation – date, time, year, season month, country, current location
- Registration – name 3 objects then have patient repeat them back to you, advise to remember the three words
- Calculation – subtract 7 from 100 for few rounds, and or spell world backwards
- Recall – after the calculation ask to remember the three words from above

# MINI MENTAL

- Language – name objects one shows the patient
- Repeat – “ no if ands or butts”
- Three stage command – finger to nose then finger to left ear – have patient follow written command, have patient write a sentence look for noun and verb
- Copy figure – have them copy a pre- drawn figure usually overlapping pentagons
- Summary – clock drawing, mini mental and primary basic neurological exam
- Lab- in addition to usual check B12 and Folate – low B12 can influence thought patterns and if severe produce paranoia – fixed by replacing the vitamin remember not oral use injection or sublingual – gut can't absorb if problem with B12 and intrinsic factor

# SUBSTANCE ABUSE & PRIMARY CARE

- Alcohol
- Some guidelines for determining advisability for inpatient medically supervised withdrawal management
- History of DT's and/ or seizures on detox
- Inability to tolerate oral medication and / or co – occurring medical conditions that make outpatient withdrawal possibly dangerous
- Now days could be withdrawal from substance in addition to the alcohol
- Recurrent unsuccessful outpatient attempts to help
- Active psychosis or cognitive impairment
- Anytime the doctor feels a patient is a candidate for inpatient – send for ED evaluation

# BENZODIAZEPINES

- Overview of alcohol withdrawal treatment
- Long acting benzodiazepines best choice chlordiazepoxide (Librium), diazepam ( valium) oxazepam ( serax) If liver disease need shorter acting such as lorazepam ( Ativan)
- Anticonvulsants can be used if too great a risk for benzodiazepines – gabapentin (Neurontin), carbamazepine ( Tegretol), Oxcarbazepine (Trileptal) can be used rather than carbamazepine less side effects,
- valproic acid ( Depakote) to use in moderate alcohol withdrawal in patient's risks of benzodiazepines too great
- Be aware of thiamine depletion treated to avoid acute Wernicke's encephalopathy then long term Korsakoff's Psychosis

# FOLLOW UP ALCOHOL LONG TERM HELP

- These suggestions are all in the context that the patient is in some type of supportive program
- The idea we always relate to the substance abuse patients " you can't do it on your own" a newer concept that seems helpful is to point out there is no long term disorder patients manage on their own such as diabetes, hypertension etc. as well as sober maintenance
- Acamprosate ( Campral) 333 mg 2 three times a day for CRAVING not a cure but help
- Naltrexone 50 mg / day reduces craving and euphoric effect of alcohol
- Antabuse a long list of serious dangerous side effects

# OPIOID DISORDERS

- Between 2000 and 2014 deaths due to opioid overdose in USA increased by 200 %
- The diagnosis of OUD is clinical, therefore history, medical and psychiatric examination along with laboratory tests are essential to make diagnosis
- Clinical manifestations : OUD – miosis, sedation, needle tracts, scars from prior infections
- Opioid overdose – pinpoint pupils, decreased respiratory rate ( < 10 breaths / minute ), reduced pulse ( < 40 beats / minute), apnea, stupor, unconsciousness,

# OPIOID

- Opioid withdrawal – dilated pupils, excessive perspiration, or lacrimation, rhinorrhea, restless, piloerection, aggressive behavior, tachypnea, or laborious breathing, hypertension, tachycardia, bradycardia, or dysrhythmias,
- Neonates can present with seizures
- Various tests utilizing urine, oral fluids, sweat or hair analysis
- The “drug screen 9” is a common panel tests for morphine, heroin, codeine and two opioids hydromorphone and hydrocodone, cocaine, cannabis, benzodiazepines, phencyclidine, amphetamines and barbiturates
- Separate screens for oxycodone, buprenorphine, and synthetic opioids including methadone and fentanyl are available



# OPIOIDS

- Treatment overview
- Evidence to support the combination of pharmacotherapy and psychosocial treatment for optimal management of OUD
- Intoxication keep high suspicion and immediately administer naloxone ( OKC Police relayed to me sometimes with fentanyl takes 4-5 doses of naloxone)
- Buprenorphine and naloxone combination (Suboxone) preferred when moderate withdrawal symptoms after the last dose appear regarding the opioid must be present before starting buprenorphine
- Detoxification protocol starts with 4 mg buprenorphine titrate every 4 hours with 4 mg until symptomatic resolution ( max 16 mg / 24 hours usually)
- Reduction of 25 % per day common for dosage tapering in withdrawal management

# STIMULANT – RELATED DISORDERS

- Stimulants enhance extracellular concentrations of monoamine neurotransmitters by disrupting the function of plasma membrane transporter proteins
- Monoamine neurotransmitters consist of serotonin , dopamine , adrenaline , noradrenaline ( noradrenaline is the main neurotransmitter of the sympathetic nerves in the cardiovascular system. Adrenaline is the main hormone secreted by the adrenal medulla ) Adrenal medulla is the inner part of the adrenal gland and main hormone secreted adrenaline (epinephrine) and noradrenaline ( norepinephrine) and the hormones are released when one is stressed also involved in fight or flight responses

# STIMULANTS

- Overall picture with stimulants involve serotonin, dopamine, adrenaline and noradrenaline these modulate psychomotor function , cardiovascular, respiratory and GI control. In addition, sleep mechanisms, hormone secretions, body temperature and pain by prolonging the neurotransmitter effect in the synaptic spaces
- These are prescribed for ADHD , narcolepsy, and occasionally treatment resistant depression
- “Bath salts” intentionally manufactured to circumvent laws and the regulation of their sales
- High doses or chronic use can lead to psychosis, violent behavior, tachycardia, hyperthermia and rare cases death

# STIMULANTS

- Common effects of stimulant ingestion include increased alertness, decreased fatigue, increased sociability, euphoria, restlessness, anxiety, increased reactivity or aggression. Long term use and dose increase can produce repetitive behavior, stereotypy, along with secondary psychosis, paranoia, auditory and tactile hallucinations, and delusions
- Large doses may produce tremors, overactive reflexes, rapid shallow breathing, confusion, agitation, nystagmus horizontal may be seen, hallucinations, panic states, elevated fever, rapid irregular heart rate. Death can occur from acute myocardial infarctions, seizures, or circulatory failure

# STIMULANTS

- Withdrawal – extreme fatigue, exhaustion, insomnia or hypersomnia depression, anhedonia, decreased motivation, and increased anxiety. Tactile sensations such as formication ( sensation of small insect drawing on the skin but nothing there)
- Stimulant not a medical emergency at this time but may last several weeks
- Treatment
- Place in darkened, secluded, quiet room , supportive, to minimize sensory overload don't restrain if can help it may even cause rhabdomyolysis ( breakdown of damaged skeletal muscle, muscle pain, weakness, blood in a tea colored urine, CPK elevated above 1000 – treatment IV fluids, possibly dialysis)

# STIMULANTS

- Treatment
- Avoid beta blockers could cause vascular constriction with unopposed alpha –adrenergic stimulation,
- *Benzodiazepines for agitation are considered first – line and used before antipsychotics use if cannot manage with benzodiazepine alone*
- *Use second generation antipsychotics to avoid anticholinergic effect such as injectable or oral dissolvable olanzapine ( Zyprexa) rather than haloperidol for example*

# STIMULANTS

- Cocaine use and cardiovascular toxicity causing ED visit due to chest pain
- Cocaine can precipitate myocardial ischemia to patients with and without coronary artery pathology
- Small but growing evidence regarding cardiovascular events associated with methamphetamine and prescription amphetamine stimulant use – some cases ventricular hypertrophy, left ventricular failure, and dilated cardiomyopathy and some studies show reversal of some of the symptoms when stimulant stopped



# CHRONIC PAIN

- Physical / emotional pain number one reason people seek medical attention
- Established literature demonstrates the relationship of chronic pain and numerous psychosocial factors, including depression, stress, anxiety and PTSD
- It is important to recognize chronic pain disorders are comorbid with psychiatric conditions
- Estimated 40% - 50 % chronic pain patients have a comorbid mood disorder and 35% have comorbid anxiety disorder
- Summarizing the usual comorbid conditions – major depression, generalized anxiety disorder, agoraphobia, panic disorder, social phobia, PTSD, substance abuse

# CHRONIC PAIN

- Personality disorders are present in high percentage of chronic pain patients ranging from 31% - 81% depending on the setting whereas the general public in America personality disorders run 10% - 15 %
- These particular patients have multiple unexplained or treatment refractory somatic complaints and compose 10% - 20% of primary care visits
- Concept of integrated care is well demonstrated in these settings as lack of training in the management of these patients can lead to burnout and worse outcomes for patients
- This illustrates the importance of team – based care which incorporates psychiatric assessment and interaction with primary care for treatment

# CHRONIC PAIN

- Among patients with chronic pain and psychiatric comorbidity, suicide is a devastating potential outcome
- Chronic pain conditions also constitute independent risk factors for suicide
- Migraines, back problems, and abdominal pain are most frequent chronic pain conditions associated with suicide
- Migraines and back problems can create suicidal ideation on their own while fibromyalgia and arthritis do not appear to enhance suicidal behavior
- Cognitive therapy (CBT) and other brief psychotherapy can be used in both psychiatric and general medical settings to improve patient's overall function and decrease the perception of pain

# CHRONIC PAIN

- Five types of chronic pain will be briefly explored to emphasize psychiatric comorbidity : Fibromyalgia, complex regional pain syndrome, headache, trigeminal autonomic cephalgias
- Fibromyalgia – present in 1% - 8% , characterized with widespread pain ; FMS patients often present with sleep disturbances , headaches, abdominal pain or depression
- In 2010 the tender point requirement for diagnosis was removed, new system has a severity scale and requirement to rule out other disorders
- Treatment of FMS requires a multimodal approach such as low impact exercise, in patients with psychological issues, treatment should begin with cognitive behavior therapy (CBT)

# CHRONIC PAIN

- Complex regional pain syndrome , characterized pain associated with atypical temperature, vasomotor and trophic changes (overall nutrition, lack of keeping constant with nutritional health) Cause is unknown
- Two types – type 1 ( formerly known as reflex sympathetic dystrophy)
- Type 2 – ( formerly causalgia) in type two an identified nerve has been injured more common in females and older adults (causalgia burning pain in a limb due to nerve damage)
- Early identification is very helpful after interventions medically, physical therapy, desensitization, then CBT and biofeedback are very helpful in the treatment
- Symptoms – allodynia, hyperalgesia ( increased sensitivity to feel pain) , edema, hair, nail, skin changes involved extremity, weakness, dystonia, temperature changes in effected area ( allodynia type pain extremely sensitive to touch)

# CHRONIC PAIN

- Headache
- 50 % of the population have recurrent headaches during a given year
- Workday loss due to headache, along with health care costs and reduced competence are extreme
- Three types of primary headache disorders, migraine, tension type and trigeminal autonomic cephalgias which includes cluster headache
- Migraine as unilateral, pulsating, moderately to severe intense headache that are aggravated physical activity last 4 – 72 hours, also one of the following nausea / vomiting and/or photophobia and phonophobia to try to decrease the number of headache days – CBT, physical therapy, biofeedback, mindfulness training as a form of relaxation along with first line treatment



# CHRONIC PAIN

- Tension – type headaches
- Most common type of headache, bilateral, lasting minutes to weeks, mild to moderate pain, tightening quality to the pain
- non- pharmacological modalities trying to decrease the frequency of the headache include relaxation and overall tension decreasing techniques
- Treating muscle “trigger points” in the muscle body especially around the para-cervical and trapezius area and at times OMT
- Ability to relax is a big issue with tension headache, relaxation techniques of all types and styles helpful, medicine for daily “performance anxiety” can be helped with propranolol



# TRIGEMINAL AUTONOMIC CEPHALGIAS

- Primary headaches and facial pain due to unilateral involvement from the trigeminal nerve
- Cluster headache in this category has little different characteristics to include: severe orbital, supraorbital or temporal pain, along with autonomic phenomena or restlessness, agitation. They occur in cyclic patterns or clusters and are one of the most painful type headache, commonly experience nighttime awakening by intense pain in or around one eye on one side of the head – autonomic symptoms including conjunctival injection, eyelid closure, lacrimation and rhinorrhea may also be present
- Treatment oxygen by bedside use at onset inhalation or subcutaneous sumatriptan type medications

# CHRONIC PAIN

- Trigeminal neuralgia ( tic douloureux) < 200, 000 cases in USA per year most common in women over 50 years old
- 95 % cases caused by pressure on the trigeminal nerve close to where it enters the brain stem - Treatment can help but not a cure
- The pain can be set off by brushing teeth, touching face, wind blowing on face, produces a burning pain
- Trigeminal nerve serves as the pain recognition for the face and one branch is involve with motor function of chewing
- Treatments vary anticonvulsants, neurosurgery, OMT to try and alleviate the pressure on the outlet from cervical spine

# INSOMNIA

- Identification of the comorbidities is the first step in the effective management of insomnia
- 20 % of adults are dissatisfied with their sleep or take medications for sleeping difficulties Insomnia is an emerging problem in children and adolescents
- Some at risk population include women, in whom insomnia peaks with pregnancy and the peri-menopausal and post menopausal years; seniors in whom insomnia afflicts one – third of the population ages 65 and older ; individuals with nontraditional work schedules; lower socioeconomic status; divorced; widowed; single individuals and people that live in noisy environments

# INSOMNIA

- Impact on society
- Key to treating insomnia is to locate the cause, what is the pattern type of insomnia
- Try to pinpoint it became a problem and how long , how does it present every night, once a week – what is the patient calling insomnia in their way of thinking?
- Sleep – Wake Disorders are in the DSM- 5 to put the situation in perspective
- There are three main disorder in this category – Insomnia Disorder, Hypersomnolence Disorder, and Narcolepsy

# SLEEP - WAKE DISORDERS

- Insomnia Disorder
- Difficulty initiating sleep, difficulty maintaining sleep ( frequent awakening and / or returning to sleep after the awakening), Early morning awakening with inability to fall back to sleep
- The sleep disturbance causes clinically significant distress or impairment in social , occupational , educational, academic behavior or other important functioning
- The difficulty occurs at least 3 nights per week, and for at least 3 months
- The difficulty occurs despite adequate opportunity for sleep
- The insomnia not better explained if occurring during some other disorder

# SLEEP WAKE DISORDER

- Hypersomnolence
- Self reported excessive sleepiness despite a main sleep period lasting at least 7 hours with one of the following ( 3 choices)
- 1. Recurrent periods of sleep or laps into sleep, within the same day
- 2. Prolonged main sleep episode of more than 9 hours per day that is nonrestorative
- 3. Difficulty being fully awake after abrupt awakening
- The hypersomnolence occurs at least 3 times a week for at least 3 months

# SLEEP WAKE DISORDER

- Narcolepsy
- Recurrent periods of an irrepressible need to sleep, lapsing into sleep or napping occurring within the same day ( 3 times a week for 3 months)
- Hypocretin ( orexin) neuropeptide produced in the hypothalamus important in sleep,
- appetite, arousal, and energy expenditure
- 
- Different types of narcolepsy
- Narcolepsy without cataplexy but with hypocretin deficiency
- Narcolepsy with cataplexy but without hypocretin deficiency
- Autosomal dominant cerebellar ataxia deafness and narcolepsy
- Autosomal dominant narcolepsy, obesity, and type 2 diabetes



# BREATHING RELATED SLEEP DISTURBANCE

- Brief overview
- Obstructive sleep apnea hypopnea
- Evidence by polysomnography of at least five obstructive apneas or hypopneas per hour of sleep and either of the following sleep symptoms
- 1. Nocturnal breathing disturbance: snoring , snorting / gasping or breathing pauses during sleep
- 2. Daytime sleepiness, fatigue, or unrefreshing sleep despite sufficient opportunities to sleep not better explained by another mental disorder
- Evidence by polysomnography of 15 or more obstructive apneas and / or hypopneas per hour of sleep regardless of accompanying symptoms

# PARASOMNIAS

- Sleepwalking: frequent episodes of arising from bed during sleep and walking about. The individual has a blank, staring face ; is a relatively unresponsive to the efforts of others to communicate with patient
- Sleep terrors: recurrent episodes of abrupt terror arousals from sleep, usually beginning of with a panicky scream. There is intense fear and signs of autonomic arousal, such as mydriasis ( dilation), tachycardia, rapid breathing and sweating during the episodes. There is relative unresponsiveness to the efforts of others to communicate
- No dream imagery is recalled with amnesia for the incident
- The episodes cause clinically significant distress or impairment in social, occupational

# PARASOMNIAS

- Nightmare Disorder
- Repeated occurrences of extended, extremely dysphoric, and well remembered dreams usually involving efforts to avoid threats to survival, security, or physical integrity and generally occur during the second half of the major sleep episode
- On awakening from the dysphoric dreams, the individual rapidly becomes oriented and alert

# PARASOMNIA

- Restless Leg Syndrome
- An urge to move the legs, usually accompanied by or in response to uncomfortable and unpleasant sensations in the legs, characterized by:
- The urge to move the legs begins or worsens during the periods of rest or inactivity
- 2. The urge to move the legs is partially or totally relieved by movement
- 3. The urge to move the legs is worse in the evening or at night than during the day, or occurs only in the evening or at night
- Persist 3 times a week for 3 months

# SLEEP WAKE DISORDER

- Short review of hypnotic medications pharmacology:
- Diphenhydramine ( Benadryl)- H1- 25 – 50 mg – intermediate 2-9 hrs.- dry mouth, constipation, urinary retention, confusing to dementia
- Trazodone ( Desyrel)- SRI – 50 – 150 – short 3-6 hrs. – dry mouth, orthostatic hypotension , rash
- Temazepam ( Restoril) – GABA – 7.5 – 30 mg. – tolerance
- Melatonin – MT1-MT2- 1-3 mg.- ultra short – 35 – 50 min – some hangover
- Zolpidem ( Ambien) – GABA – 5 – 10 mg. – short – 2-6 hr. – amnestic behavior
- Ezopiclone ( Lunesta) – GABA – 1- 3 mg. – intermediate 6 hr. – amnestic behavior, headache, rash, metallic taste
- Doxepin ( Silenor) – 3-6 mg. – intermediate – 12 – 15 hr. – dizzy, tachycardia

# SLEEP WAKE DISORDER

## RESTORING NORMAL SLEEP HYGIENE

- All of the hypnotic drugs are made for temporary – all can develop dependency – physical / and or psychological
- Maintain a regular sleep schedule –
- Avoid lying sleepless in bed after 20- 30 minutes sleepless get up
- Avoid clock watching behavior
- Schedule “thinking time” earlier in the evening not in bed
- Establish a regular and relaxing bedtime routine, avoid daytime naps, avoid caffeinated beverages after early afternoon, exercise in the morning not evening before bed to stimulating
- Breathing need evaluation and treatment and/or restless leg medication or eliminate the cause if known (sleep study)

# AUTISTIC SPECTRUM

- A group of neurodevelopment disorders that affect how people communicate, learn, behave and socially interact. They may have repetitive characteristic patterns of behavior or narrow interests. There are different levels of the symptoms that vary with individuals
- Spectrum refers of the wide range of symptoms, skills, and levels of disability in functioning that occur with people with ASD
- Some ASD are able to be fully able to perform all activities of daily living while others require support for basic activities
- Researchers have identified a number of genes associated with the disorder
- Imaging studies have found differences in development of several regions of the brain



# AUTISTIC SPECTRUM

- Autism is more common in children born prematurely
- Parental practices responsibility theory for ASD is been totally disproven
- Multiple studies have shown vaccinations have no role in the risk for ASD
- A number of spectrum individuals are very talented and have a special niche in life such as an interest that they are passionate about like math, or a hobby, cartoons, TV show series, some type collection etc.
- Many of these individuals are misdiagnosed and not availed the therapy and correct treatment they deserve, they are mistaken in public schools as oppositional or bullied and become angry, discouraged, misdiagnosed as schizophrenia

# AUTISTIC SPECTRUM DISORDER ( ASPERGER'S DISORDER)

- Symptoms – classified in two categories social communication and interaction and patterns of behavior
- Social communications and interaction
- Poor eye contact and lack of facial expressions
- Delayed speech or in severe cases no speech
- Problems with directions and questions
- May be disruptive or aggressive
- Does not respond to his or her name
- Repeats phrases or words
- Resists cuddling and holding



# AUTISTIC SPECTRUM

- Patterns of behavior
- Repetitive movements like hand shaking , spinning or recking
- Difficulty in body movement coordination
- Sensitive to light, sound or touch
- Self- harming activities such as headbanging
- Specific food preferences or food pattern

# AUTISTIC SPECTRUM

- Treatment involves – socialization therapy, medication for problems with control of their anger, depression, ADHD, anxiety as along with the spectrum and many times PTSD
- In explaining to teachers and parents it is necessary to help them understand how the thinking process occurs in spectrum. Temple Grandin, PhD. In anima husbandry and spectrum has written a book saying she thinks in pictures
- Spectrum people have trouble with facial recognition, reading body and facial gestures, and trying to understand what t he English language means at times with all its words with many meanings.

# CARDIOVASCULAR

- Heart disease and mental disorders ( in particular major depression) are the leading causes of disability and loss of work and or productivity
- Co – occurrence of psychiatric disorders with cardiovascular disease is extremely common – Diagnostic and management problems related to this comorbidity occur regularly in the course of everyday practice
- Cardiac health maintenance is less likely to be achieved by individuals with depression.
- Patients with mental illness who are hospitalized for acute coronary syndromes are less likely than other patients to be offered revascularization procedures

# CARDIOVASCULAR

- It is important to consider both atypical presentations of heart disease and non-cardiac causes of chest pain in addition to the possibility that cardiac related symptoms are due to psychiatric illness
- Women more frequently report atypical cardiac symptoms (especially upper abdominal pain and fatigue) as a presentation of myocardial ischemia and may go on to have nonspecific electrocardiogram findings
- Many other illnesses can cause chest pain other than psychiatric or cardiac such as pericarditis, pleuritic pain , pulmonary embolism, GERD, and esophagitis

# CARDIOVASCULAR

- Panic disorder tops the list of psychiatric disorders presenting with somatic symptoms suggesting cardiac disease
- The idea in treating panic disorder is to prevent the attacks not wait until one starts to treat ( the horse is out of the barn at that point)
- An abrupt onset , palpitations, tachycardia , short of breath, dyspnea, choking chest pain, nausea, paresthesia, dizziness or faint, fear of dying
- Normal ECG with probable sinus tachycardia
- Emergency department visits for chest pain 20 % - 40% are attributed to panic disorder



# CARDIOVASCULAR

- Illness anxiety disorder is characterized by the persistent fear of having an illness despite the absence of significant physical symptoms
- 1% - 10% of population is the prevalence of the illness in the general population
- Fear of having heart disease is a common form of the disorder

# CARDIOVASCULAR

- Major depressive disorder has slightly different presentation in heart disease and that makes it overlooked many times!
- A persistent change from one's normal state, with sadness, depressed mood, loss of interest ( anhedonia), thoughts of death or suicide and disturbance in appetite, self esteem, concentration. One characteristic noted and sometimes not realized regarding depression is a change in personality, brooding, anger, or psychomotor retardation, can be mistaken for (normal ) reaction to heart attack, rationalizing as " you would be down to if you had a heart attack, he'll snap out of it"

# CARDIOVASCULAR

A history of depressive symptoms is clearly associated with an approximately doubled incident of coronary disease and with more functional limitation, reduced quality of life, and a two to fourfold increased risk of morbidity, recurrent cardiac events and mortality in patients with established cardiac disease – American Heart Association recommends that patients with heart disease have routine screening and intervention for depression

Because depression is so common in the U.S. population, as evidenced by a 6% - 10% current prevalence and a 16% lifetime prevalence, this relationship is considerable epidemiological significance

Patients with coronary disease have depressive episodes occurring 15% - 20% rate at same rate that they develop heart failure -The occurrence of significant depressive symptoms that do not meet the criteria for the diagnosis of major depression is even more common

# CARDIOVASCULAR

- Randomized double – blind, placebo controlled trials, the SSRI's sertraline, citalopram, fluoxetine, escitalopram were found to be effective and well tolerated treatments for depression in the setting of coronary artery disease
- Paroxetine was helpful in another study
- Do not use tricyclic antidepressants anymore – can produce arrhythmias and if overdose lethal
- Exercise programs have been successful in treating depression in cardiac disease

# CARDIOVASCULAR

- Schizophrenia and other psychotic disorders – patients with persistent mental illness have poor access to care
- These patients have many risk factors more likely to smoke cigarettes, and most second generation antipsychotics increase the risk for metabolic syndrome

# CARDIOVASCULAR

- PTSD and acute stress is associated with increased risk of CAD events and coronary mortality; furthermore , acute coronary syndrome, hospitalization, and treatment may themselves be traumatic events that set the stage for incident acute stress disorder and PTSD , creating a vicious cycle of pathology, morbidity and mortality
- The estimated incidence of acute stress disorder progressing to PTSD in acute coronary syndrome hospitalizations is 5% - 15% , and post acute coronary syndrome PTSD is associated with a one and one half - to two fold increase in risk for subsequent coronary events over 1- 5 years follow up

# CARDIOVASCULAR

- Cognitive disorders – systemic atherosclerosis affects not only coronary and peripheral vasculature but also cerebral circulation
- The incidence of delirium after cardiac surgery is 10% - 50% with greater risk in patients with preexisting cognitive impairment
- Even in the absence of absence of postoperative delirium, postsurgical neuropsychological impairment occurs in 5% - 20% of cardiac patients, with older patients being an important risk factor



# CARDIOVASCULAR

- Sexual dysfunction , diminished desire and arousal are common in patients with heart disease and many factors contribute – accompanying disorders such as diabetes, hypertension, and dyslipidemia may damage neural and vascular systems necessary for sexual response
- Medications may reduce desire and genital neurovascular inflow
- Depression, fear and fear on the part of the sexual partner of a patient with heart disease also contribute to impaired function
- The American Heart Association has published extensive guidelines for cardiac patients and their partners with recommendations for counseling on safe sexual practices

# CARDIOVASCULAR

- Sleep apnea is a risk factor for both heart disease and a range of psychiatric symptoms
- Breathing related sleep disorders promote pulmonary hypertension and heart failure as well as depressed mood, fatigue, irritability, and cognitive dulling

# CARDIOVASCULAR

- Cardiovascular effects of treatments for psychiatric problems in heart disease patients
- Antidepressants SSRI's may slow heart rate but usually not to significant degree Serotonin / norepinephrine reuptake inhibitors not as extensively studied as SSRI's but not reported to cause significant QT interval prolongation
- Some blood pressure increase noted with non time release venlafaxine
- SSRI's impair platelet storage of serotonin and may thereby reduce platelet activation
- Bupropion is generally well tolerated and few cardiac effects

# CARDIOVASCULAR

- Antipsychotics can cause QT interval prolongation, torsades de pointe, metabolic syndrome. Cardiomyopathy is an adverse effect of clozapine
- Aripiprazole ( Abilify) and lurasidone ( Latuda) have no effect on the QT interval, where as thioridazine ( mellaril), ziprasidone ( Geodon) and intravenous haloperidol ( Haldol) cause substantial QT interval prolongation; other antipsychotics have intermediate effects ( Geodon was not as severe as originally thought)
- It is important to note the weight gain with these medications; the greatest gain to the least - Clozapine, quetiapine ( Seroquel), olanzapine ( Zyprexa), risperidone ( Risperidal), ziprasidone ( Geodon) , aripiprazole (Abilify)(Rexulti)
- The newer 2<sup>nd</sup> generations are much improved with weight gain lurasidone ( Latuda), cariprazine ( Vraylar) , lumateperone ( Caplyta), olanzapine/ samidorphan ( Lybalvi)

# CARDIOVASCULAR

- Stimulants at low therapeutic dosage can produce modest heart rate and blood pressure increase
- Although labeled as contraindicated in patients with structural heart disease, stimulants have been studied in several small depression treatment trials including elderly and found no evidence of adverse cardiac effects from stimulant treatment in depression

# CARDIOVASCULAR

- Pharmacodynamics and pharmacokinetic interaction between psychoactive and cardiac medications have the potential to reduce drug efficacy and increase risk of toxicity
- Antagonists of the renin – angiotensin system and thiazide diuretics reduce lithium clearance, whereas osmotic diuretics (mannitol) increase the drug's clearance
- Hyponatremia, an effect of SSRI's, carbamazepine (Tegretal) and oxcarbazepine (Trileptal) can be exacerbated by concomitant use of diuretics (usually in the first 6-8 weeks)
- The anticholinergic effects of procainamide and quinidine, digoxin, isosorbide dinitrate, and furosemide can antagonize effects of donepezil (Aricept) and rivastigmine (Exelon) and they may exacerbate B-blocker induced bradycardia

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