POST TRAUMATIC STRESS DISORDER

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OBJECTIVES:

- Utilize Polleverywhere to facilitate learning and understanding of Posttraumatic Stress Disorder (PTSD)
- Present an overview of PTSD
- Describe the prevalence of PTSD in surgical patients
- Discuss two case studies of patients with PTSD undergoing surgery
- Present clinical findings of various tactics when presented with a PTSD surgical patient
- Summary of information learned and test of learning regarding PTSD

WHAT IS POSTTRAUMATIC STRESS DISORDER (PTSD)?

- Post-traumatic stress disorder (PTSD) is a common psychiatric disorder that can affect individuals who experience or witness a life-threatening or violent event
  - EXPOSURE TO A TRAUMATIC EVENT THAT EVOKED INTENSE FEELINGS OF FEAR, HOPELESSNESS, AND HORROR
  - DEMONSTRATION OF AT LEAST 5 OF THE 17 "CLUSTER" SYMPTOMS-NEXT SLIDE
  - PRESENCE OF SYMPTOMS THAT PRESISTED FOR AT LEAST A MONTH
  - PRESENCE OF SYMPTOMS THAT ADVERSELY IMPACTED FUNCTIONING OR RESULTED IN SIGNIFICANT DISTRESS

- Traumatic events-such as an accident, assault, military combat or natural disaster-can have lasting effects on a person's mental health and may manifest decades after the traumatic event

- While many people will have short term responses to life-threatening events, some will develop longer term symptoms that can lead to a diagnosis of Posttraumatic Stress Disorder (PTSD)

SYMPTOMS OF PTSD

Re-Experiencing Symptoms (1)

- Flashbacks
- Recurrent distressing dreams
- Distress on exposure to trauma-related cues
- Physiological reactivity to trauma-related cues

Avoidance Symptoms (3)

- Avoidance of people, places, or activities that remind of the trauma
- Inability to recall aspects of the trauma
- Lack of participation in significant activities
- Feelings of detachment from others
- Sense of foreshortened future

Persistent arousal Symptoms (2)

- Difficulty sleeping
- Outbursts of anger
- Difficulty concentrating
- Exaggerated startle response
- Hypervigilance

PTSD IN COMBAT VETERANS

PTSD IN COMBAT VETERANS

Capt. Dan Luckett, 27, of Norcross, Ga., takes a seat at Combat Outpost Ashoqeh in Afghanistan's Kandahar province. Luckett lost his left leg and part of his right foot in a bomb blast in Iraq in 2008.

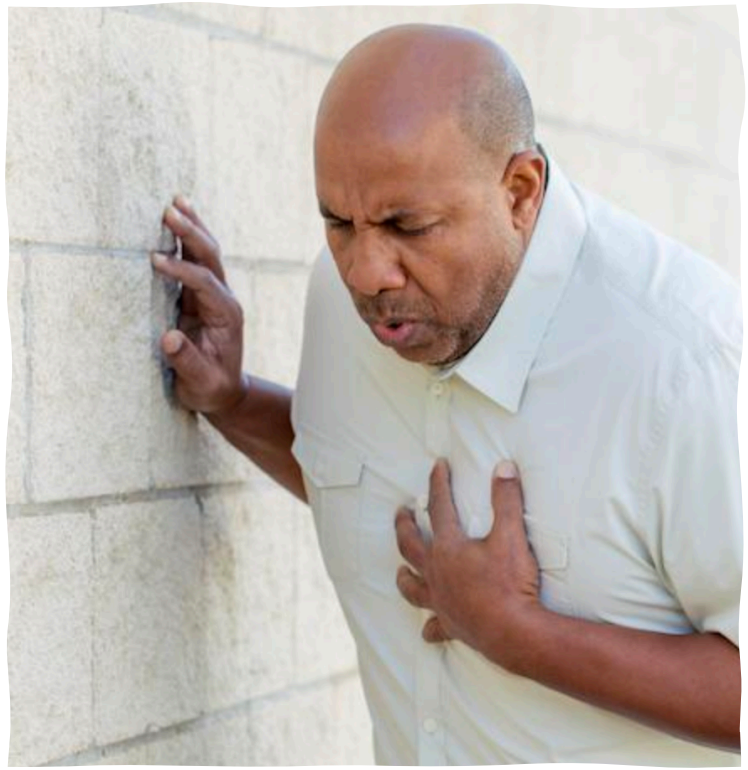
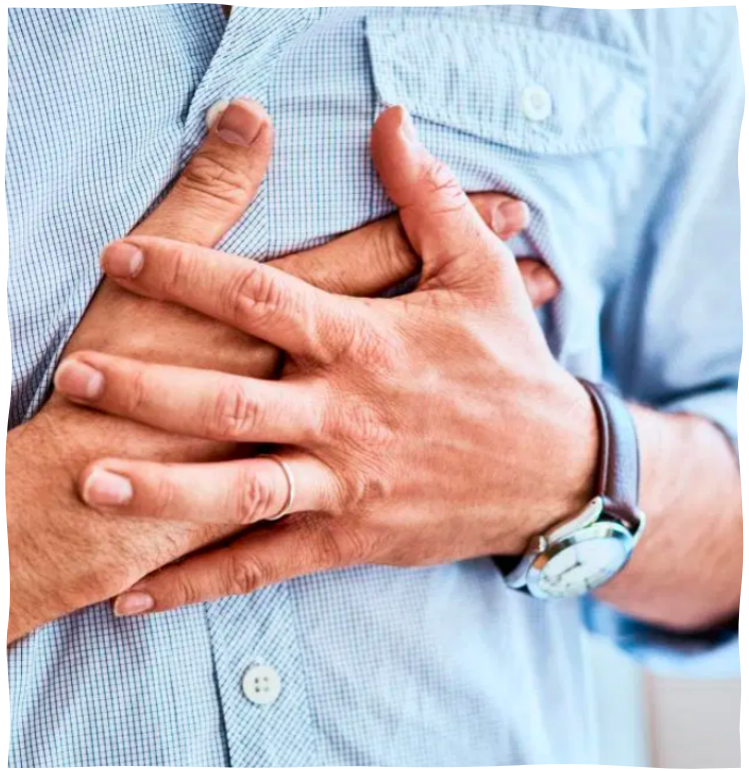
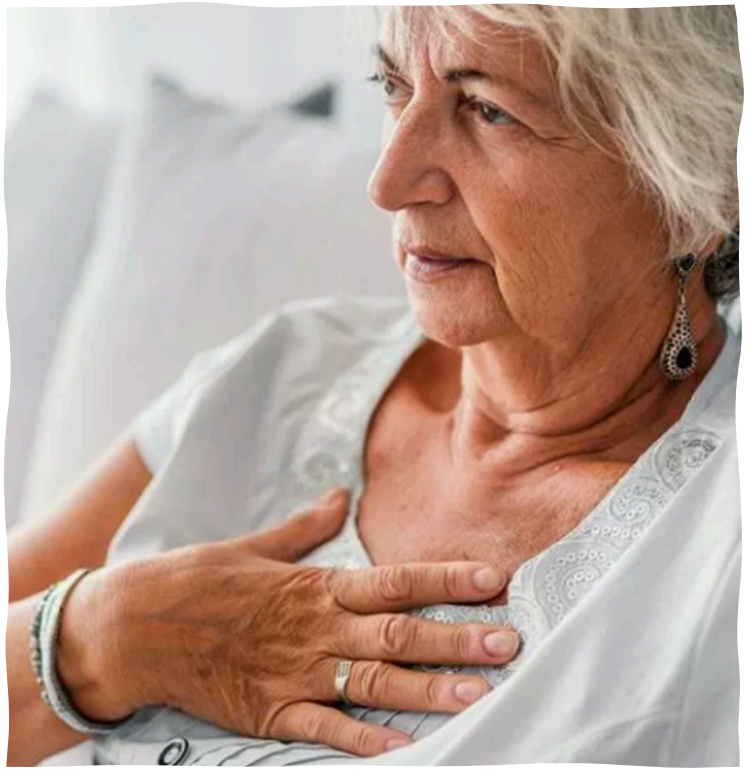
CO-MORBIDITY OF PTSD IN VETERANS

THE MILITARY PTSD SOLDIER IS:

- Women
- Non-white
- Lesser educated
- Lower ranked
- Army
- Greater than 2 deployments
- Prior Trauma
- Witnessed someone killed
- Personal trauma
- Fired a weapon
- Lack of post-deployment support

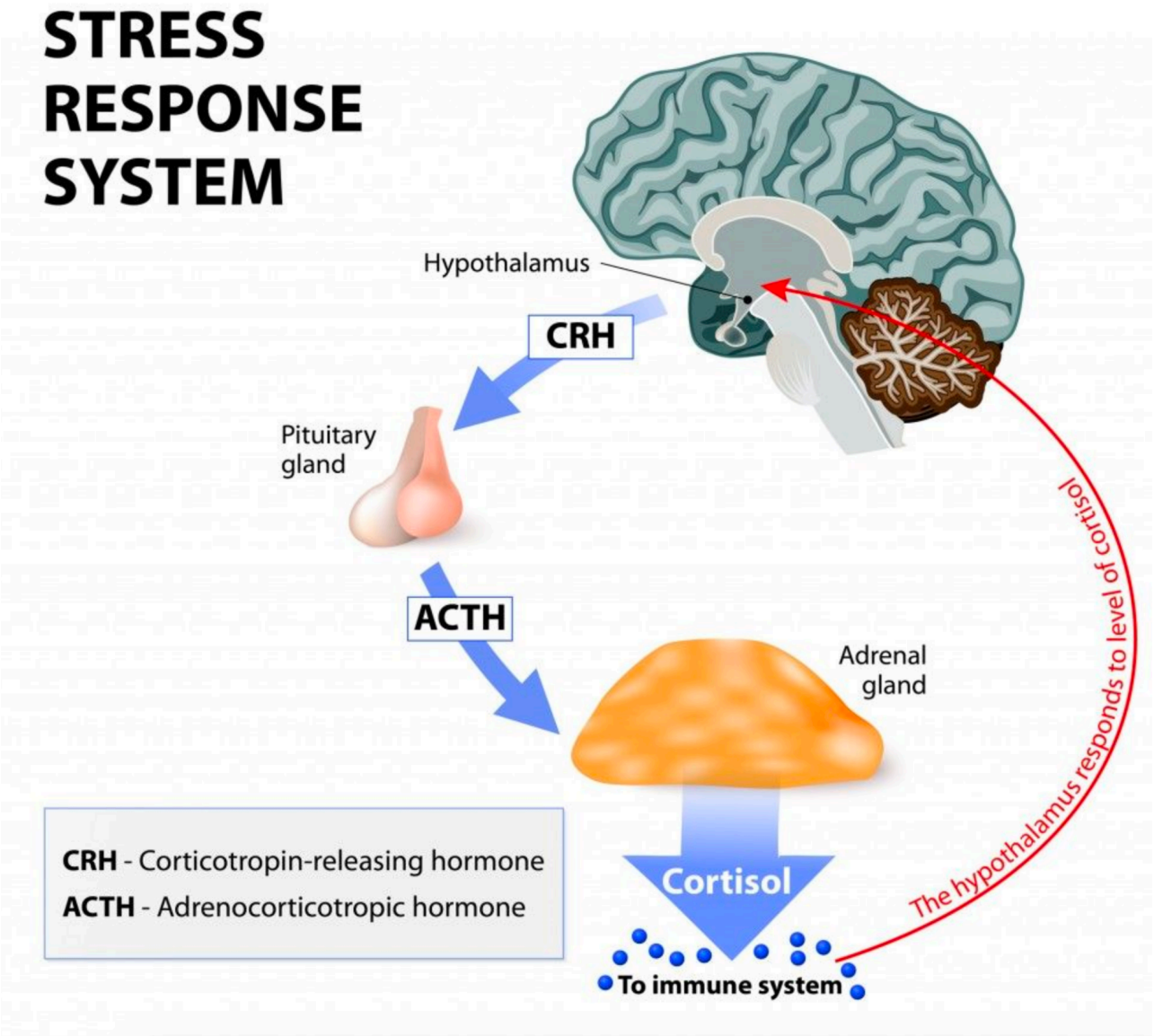
IMPACT OF POST-TRAUMATIC STRESS DISORDER ON PHYSICAL HEALTH

9/11 TERRORIST ATTACK

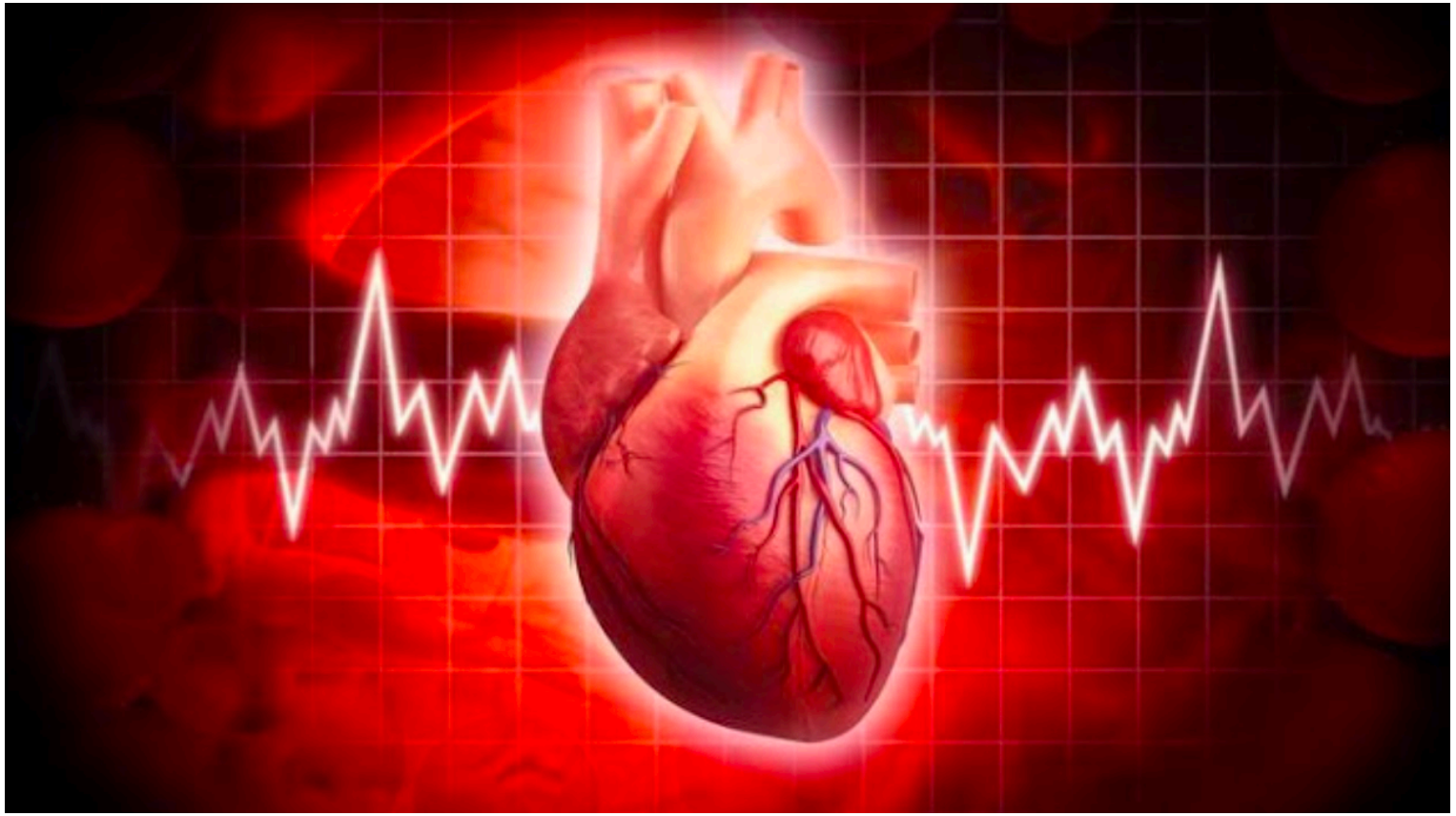




POST-MYOCARDIAL INFARCTION PTSD

BIOLOGICAL AND BEHAVIORAL MECHANISMS



SYMPATHETIC STIMULATION



MEDICATION ADHERENCE

Not as prescribed 12% versus 9%

Forgot to take it 41% versus 29%

Skipped Doses 24% versus 13%

DELAY PRESENTATION TO HOSPITAL WITH ACUTE CORONARY SYMPTOMS

PTSD patient took 15 hours longer to report to the hospital after onset of symptoms

PTSD patients had a 173% longer length of stay

SUBSTANCE USE

Veterans with PTSD demonstrated:

- 3 times greater prevalence of smoking
- 5 times greater prevalence of alcohol abuse
- 3 times greater prevalence of other drug abuse compared with non-PTSD veterans

EMERGENCE DELIRIUM

- Emergence delirium (ED) is characterized as an altered mental perception that may include confusion, disorientation, illusion, hallucination, and momentary agitation.
- The estimated incidence of ED is 8% overall but can be as high as 50% in children
- Emergence delirium may result in major consequences due to incidental traumas such as self-extubation, removal of catheters, and injury to both the patient and staff

EMERGENCE DELIRIUM WITH POST-TRAUMATIC STRESS DISORDER AMONG MILITARY VETERANS

TWO CASES OF ED AFTER GENERAL ANESTHESIA ASSOCIATED WITH PTSD ARE PRESENTED

TRADITIONAL PLAN OF CARE

- 58-year-old male was admitted for an open reduction internal fixation of his right distal radius fracture
- PMH: Impaired glucose tolerance, hypertension, dyslipidemia, obstructive sleep apnea, asthma, PTSD, anxiety, depression, and polysubstance dependency
- "WILD WAKEUPS" with previous surgery

MODIFIED ED-FOCUSED PLAN OF CARE

- 63-year-old male veteran presented for left carpal tunnel release and excision of lipoma of the left hand
- PHM: PTSD, bipolar disorder, anxiety, depression, obstructive sleep apnea, hypercholesterolemia, peripheral vascular disease, and chronic lower back and neck pain
- "Violent wake-ups" from a colonoscopy as well as shoulder surgeries. He reported he sprained an ankle from a wild emergence from a colonoscopy a few months previously.

TRADITIONAL PLAN OF CARE

- Upon emergence, the patient was agitated, restless, and moving around on the operation room table.
- He shouted with eyes closed, "Call a medic. I am hit. I am hit." Additional staff was called in to prevent the patient from harming himself.
- He continued to yell for another five to seven minutes, at which point the patient was sedated with 70 mg of propofol. As the propofol wore off, the patient reemerged less agitated, but he remained disoriented. He continued to say, "I'm hit. I'm hit. Call a medic."
- After another ten minutes, the patient's spouse was gowned in disposable coveralls and brought into the operating room.
- The patient became calmer when he heard his wife's voice, but he remained disorientated for another two minutes. The moment of clarity came abruptly; he recognized his wife. The patient was again informed of his location and that surgery was completed.
- He immediately apologized and asked if he had hurt anyone.

MODIFIED ED-FOCUSED PLAN OF CARE

- At the end of surgery, the patient was aroused by our verbal coaching while we controlled the noise levels in the operating room.
- He was able to verbalize the clarity of his understanding without agitation or disorientation while still in the operating room. He communicated with us in a calm manner while transferring to a recovery room.

	Case One	Case Two
Preoperative management	• No premedication	• Initiated 25 mcg dexmedetomidine infusion over 20 minutes before induction • Introduced a provider's voice with voice coaching during emergence
Intraoperative management	• Total 500 mcg of fentanyl and 1 mg of hydromorphone for pain management	• Continued to infuse 75 mcg of dexmedetomidine over 30 minutes • 50 mcg fentanyl at induction and no additional opioid required for pain management • Local anesthetics by a surgeon • Quiet surrounding during emergence • Verbal coaching by the same anesthesia provider
Postoperative management	• Verbal coaching • Resedation with 75 mg of propofol intravenous injection • Patient's wife attenuated the symptoms of ED	• No additional supports required
Outcome	**ED**	**No ED**

DISCUSSION OF THE TWO CASES

Risks associated with ED

- Hypoxia and high oxygen supply were also reported to have a degree of relationship with ED
- Previous studies indicate the most common risk factors for ED after surgery are benzodiazepine use at preop and unmanaged postoperative pain
- PMH: No physiologic factors associated with ED except anxiety/depression assoc with PTSD

Actions to decrease those ED risks

- Patients were maintained with normal oxygen saturation on a FIO^2 concentration around 0.5%
- Benzodiazepines were excluded for both cases and surgical pain managed with opioids or dexmedetomidine (Precedex)
- LA administered to decrease postop pain, quiet surrounding during emergence, verbal coaching by the anesthesia provider

Clinical Administration

- Onset of 30 minutes as compared to that of midazolam 3-5 minutes and that of propofol 30-50 seconds
- can be decreased by infusion of standard loading dose of 1µg/kg, over 10 minutes
- Duration of analgesic action of about 4 hours as compared to that of Fentanyl up to 60-80 minutes
- Offset of sedative action in 5 minutes, while midazolam has about 2 to 6 hours and propofol has 3-8 minutes.

DEXMEDETOMIDINE

LET'S THINK ABOUT THIS...

UNFAMILIAR ENVIRONMENTS AND UNFAMILIAR PEOPLE

ESTABLISH TRUST AND REASSURE THE PATIENT

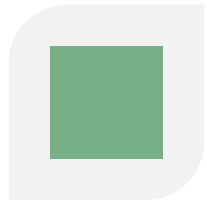
CALM APPROACH

MINIMIZE LOUD NOISES AND MOVEMENTS

VERBAL VERSUS TOUCH ON EMERGENCE

GOAL: COMFORTABLE AND SAFE

EXPECTATIONS CLEAR



INVESTIGATE WITH CAUTION

CONCLUSION

- PTSD patients are a high-risk for cardiac-related experiences as well as behavioral impairment
- The prevalence of ED in the general population was reported at 8%, while at 20% to 27% in combat veterans in the military population
- Anecdotal evidence suggests that the perioperative process can transiently exacerbate PTSD symptoms, but the study of the effect of surgery and anesthesia on posttraumatic symptoms is limited
- There are many unanswered questions about the effect of surgery on patients with PTSD
- Accurate estimation of risk of postoperative morbidity and mortality in this population is further confounded by the patterns of risk factors associated with PTSD
- Future research should aim to better define the contribution of PTSD to postoperative morbidity and mortality and to identify the unique perioperative needs of patients with PTSD

THE END....

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