

## FAMILY SURVIVED THE SINKING OF "COSTA CONCORDIA"

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### INTRODUCTION

Acute stress disorder (ASD) was introduced into DSM-IV to describe acute stress reactions (ASRs) that occur in the initial month after exposure to a traumatic event and before the possibility of diagnosing post-traumatic stress disorder (PTSD), and to identify trauma survivors in the acute phase who are high risk for PTSD. The recommendation to shift ASD and PTSD out of the anxiety disorders section reflects increased recognition of trauma as a precipitant, emphasizing common etiology over common phenomenology.

PTSD is an anxiety disorder precipitated by exposure to an event that involves actual or threatened death or serious injury, or threat to the personal integrity of self or others that causes intense fear, helplessness, or horror. Typical post-trauma symptoms are re-experiencing some aspects of the trauma, avoidance of trauma-related stimuli, numbing, and increased arousal.

Post-traumatic syndrome differs from the majority of other diagnostic categories as it includes in its criteria the presumptive cause of the trauma (criterion A).

PTSD can be acute (1-3 months duration of symptoms), chronic (more than 3 months in duration), or delayed (symptoms appear at least 6 months after the trauma). The diagnosis requires that the onset of the symptoms or re-experiencing, avoidance, numbing, and arousal be related to exposure to the traumatic event.

The DSM-IV divides the 17 symptoms of PTSD into three clusters: re-experiencing of the trauma (e.g. intrusive thoughts, nightmares, flashbacks, and emotional or physiological reactivity with reminders), avoidance/numbing of trauma reminders (e.g. avoidance of thoughts, conversations, activities, feeling, individuals or places that are reminders, inability to recall portions of the trauma, decreased interest in pleasurable activities, detachment or estrangement from others, restricted affect and foreshortened future) and arousal (e.g. sleep problems, irritability and anger, hypervigilance, difficulty concentrating and exaggerated startle).

The diagnosis of PTSD may prove to have several subtypes, depending upon such factors as the developmental phase during which the trauma occurred, presence or absence of impulsive dyscontrol, specific symptom profile (including dissociative symptoms), comorbidity, or pre-existing psychiatric disorder.

Different etiopathogenic models propose to account for the PTSD's heterogeneous appearance and insta-

bility with time. The comorbidity concept sees the PTSD as an independent entity other independent pathologies coexist with. The typologic concept suggests that the PTSD is an independent entity which shows different clinical appearances based on symptomatic descriptions. The "cascade" concept suggests to see the PTSD as an independent entity which offers, with time, different symptomatic appearances, in evolution, because of events caused by after effects, in different areas of the PTSD itself.

The recommendation to shift ASD and PTSD out of the anxiety disorders section in DSM-5 reflects increased recognition of trauma as a precipitant, emphasizing common etiology over common phenomenology.

### CASE REPORT

The Italian cruise ship "Costa Concordia" partially sank on the night of 13 January 2012 after hitting a reef off the Italian coast and running aground at Isola del Giglio, Tyrrhenian Sea, requiring the evacuation of the 4,252 people on board. Twenty-five people are known to be dead; 64 others were injured (at least two seriously) and 7 are missing.

Among the passengers, a Croatian family; HR-S, her husband DR, and their nine-year old daughter DR-S survived the disaster of the ship.

"It was a real horror! Every second we feared of the worst happening! We are still not aware of what we experienced during the accident. We do not believe that this could happen. We are constantly ruminating pictures of people struggling for life, blood, panic, fear, crying... All of us still have nightmares." - said HR-S and DR. The parents described their awkward experience.

At the time of the accident, around 21:20 pm, they were on the third floor of the ship in the restaurant for dinner, while their daughter was on the tenth floor in the playroom.

There was a sudden, loud bang, which a crew member (speaking over the intercom) ascribed to an "electrical failure". The ship lost cabin electrical power shortly after the initial collision. The boat started shaking. Once the emergency alarm was set off people started to panic and push each other in a bid to get into lifeboats. Soon after grounding, the ship listed more extremely, trapping people inside.

"Everything happened really fast. All of a sudden we felt the boat hitting something and everything just started to fall, all the glasses broke and everybody started to panic and run. I was under impression that all of us were going to finish into the water. Panic spread through the ship. We were trying to find our daughter, but we did not find her, neither in the playroom nor in the theatre. Our search continued for the next hour and a half.

When the crew members found her and brought her to us, we thanked God we were together so we could board the lifeboat. Everybody tried to get a lifeboat and people started to panic. A lot of people were falling down the stairs and some were hurt because things were falling on them. Everybody was trying to get on the boats at the same time and they were pushing each other. When the ship later turned around, it began to list approximately 20° to the starboard side, creating problems in launching the lifeboats. Normal lifeboat evacuation became "almost impossible" because the ship had listed so quickly. A number of people were jumping into the sea to swim ashore.

"We were not able to board lifeboat" - recalls HR-S. At that point began a real struggle for their lives.

"When we reached the exit, the cruiser tilted even further, all the way on one side. I managed to give my daughter to a crew member, while my wife stayed at three meters in height. I pulled her toward me with a rope, and I continued to drag her but she slipped from my hand and fell down on her back. She shouted at me to save our daughter and that she would somehow try to save herself. Shortly after, he and their daughter were on the lifeboat and around one o'clock in the morning they reached the shore."

On the land the family was taken to a local sports arena and there they were waiting for almost 6 hours, hungry, half naked, with that little clothes on them, being soaking wet.

Then they were transferred to the town of Savona where was organized a medical assistance. The medical collar was put around the woman's neck, which was 18 hours after injury.

They returned to Zagreb on Sunday 15<sup>th</sup> January 2012. Eventually, after arriving to Split, they all got a medical assistance in The Split University Hospital Center. Mrs HR-S complained about the pain in the lower part of the back, hurt after the fall from the approximately 3 meters height. After detailed examination the fracture of the L3 body of vertebra was diagnosed.

At the Psychiatric Outpatient Clinic of Split University Hospital Center the couple received psychiatric help.

The usual psychological debriefing in order to prevent symptoms of PTSD, anxiety and depression was provided, with recommendation to continue with cognitive-behavioural therapy. Evident symptoms of the Acute stress reaction, anxiety and depression were indication for psychopharmacotherapy. Selective serotonin reuptake inhibitors are generally the most appropriate choice of the first-line medication for PTSD, and effective therapy should be continued for 12 months or

longer. Among the SSRIs fluvoxamine has been found effective in the pharmacological treatment of PTSD, and it was prescribed to husband in the initial dose of 100 mg at the evening ½ tbl. for a free days to avoid gastric side effects, later on to continue with 100 mg. For the wife Duloxetine was chosen because of the dual action, as an antidepressant and for treatment of the vertebral pain syndrome. For reducing prominent symptoms of anxiety benzodiazepines were prescribed, alprazolam 0,5 mg t.i.d to husband and diazepam 5 mg l, l, 2 to wife, because of its action also as a myorelaxant. Because of the sleep disturbance, difficulties to fall asleep, hypnotics were prescribed to both of them, midazolam a 15 mg in the evening.

## DISCUSSION

Reaction to stress vary from one person to another due to differences in their biological, genetic, environmental, and psychological characteristics, as well as their personal history.

Stress causes neuroanatomical and neurochemical changes in the brain.

A particular genetic profile also plays a role in vulnerability or resilience to stress.

A long-term dysregulation of cortisol and noradrenalin, the main stress mediators, favors the development of different anxiety disorders, including PTSD. Stress-induced changes in hippocampus (atrophy), amygdalae (volume reduction), and prefrontal cortex are also frequent findings in patients with these disorders. Complex neurobiological changes triggered by such a traumatic and stressful experience may explain a wide range of PTSD symptoms and provide the rationale for psychopharmacological treatment. Data suggest that biological dysregulation of the glutamatergic, amine neurotransmitter (noradrenergic and serotonergic) and neuroendocrine pathways plays a fundamental part in the pathology of PTSD and may cause brain structural as well as functional abnormalities.

Clinical experience has shown that Selective serotonin-reuptake inhibitors are more effective than noradrenalin-reuptake inhibitors or tricyclic antidepressants. Antipsychotic drugs, especially atypical ones, have been shown effective in PTSD patients with psychotic characteristics or refractoriness to other treatments. Mood stabilizers seem to reduce mostly autonomous overreactions to stress. Der Boer et al, van der Kolk et al, Marmer et al. found that fluvoxamine was well-tolerated and effective in reducing the core PTSD symptoms.

In addition to medications, PTSD patients should receive psychotherapy and social therapy. It is very important for the patient to adjust the lifestyle and decrease the exposure to stress in order to reduce chronic stress and development of associated diseases.

Self-esteem and social support also contribute to the long-term health improvement and positive outcomes. The question of timing of the therapy, however, is still

open. To prevent long-term consequences, intervention should follow immediately after trauma, because traumatic memory with time becomes resistant to therapy. On the other hand, early treatments are not always necessarily effective; in some cases, they have even been reported to aggravate the symptoms.

Although single-session psychological debriefing is offered as immediate psychological assistance to survivors of all kinds of traumatic events, its efficacy in the prevention of symptoms of post-traumatic stress disorder (PTSD), anxiety or depression is not empirically supported. Recent studies show that individual single-session psychological debriefing does not prevent and can even aggravate symptoms of post-traumatic stress disorder (PTSD). There is no current evidence that psychological debriefing is a useful treatment for the prevention of post traumatic stress disorder after traumatic incidents. Compulsory debriefing of victims of trauma should cease. Single session individual debriefing did not reduce psychological distress nor prevent the onset of post traumatic stress disorder (PTSD). On the basis of current evidence, more benefits are expected from early treatment of only those patients with acute stress disorder or acute PTSD with four or five sessions of cognitive-behavioural therapy (Bryant et al. 1998, 1999, 2003, Bisson et al. 2004) or 12 sessions of cognitive therapy (Ehlers et al. 2003) in order to prevent a chronic course of PTSD.

## CONCLUSION

Acute stress disorder (ASD) describe acute stress reactions (ASRs) that occur in the initial month after exposure to a traumatic event and before the possibility of diagnosing posttraumatic stress disorder (PTSD), and identify trauma survivors in the acute phase who are high risk for PTSD. Post-traumatic syndrome differs from the majority of other diagnostic categories as it includes in its criteria the presumptive cause of the trauma (criterion A).

The existing evidence base does not provide sufficient data to suggest particular predictors of response to treatment or to demonstrate that any particular class of medication is more effective or better tolerated than any other. Selective serotonin reuptake inhibitors are generally the most appropriate choice of first-line medication for PTSD, and effective therapy should be continued for 12 months or longer. The most appropriate psychotherapy is exposure therapy, and it should be continued for 6 months, with follow-up therapy as needed.

High prevalence and enormous personal and societal costs of PTSD requires additional research.

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