

Health emergencies during flights (Case reports and Mini-review)

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Original Article

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Abstract:

Cases of acute air travel events with short mini-review are presented; commonest acute events are cardiovascular (myocardial infarction, stroke etc.) and diabetes with complications (hypoglycemia, diabetic coma etc.). Those are followed by the acute intoxications, allergic reactions and infectious diseases; last group of the diseases being psychiatric

disorders. Mortality is rather exceptional (1:600 – 600,000 flights/year), however, emergency landings are common

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Introduction

In air travel the commonest acute events are cardiovascular (myocardial infarction, stroke etc.) and diabetes with complications (hypoglycemia, diabetic coma etc.). These are followed by acute intoxications, allergic reactions and infectious diseases; last group of diseases being psychiatric disorders. Mortality is rather exceptional (1:600 – 600,000 flights/year), however, emergency landings are common.

Case reports

Case 1 - Sub-fatal Tachycardia without acute consequences

A lady, 20 year old model from an international beauty competition having a BMI < 20, was on a midnight flight from Lisbon to Bratislava (5 hours 05 minutes). During dinner she had a regular coca cola, coffee and on board 0.5 – 1 liter of coca cola. While flying over Salzburg she had an extreme tachycardia with obtundation and somnolence with a heart rate of 150 - 180 min. to 200 - 240 per minute. There was no AED on board and the oxygen tank was empty so an incidental doctor used a parasympathetic maneuver with only very limited efficacy, decreasing the heart rate 180/min to avoid emergency landing in Salzburg. After normal landing in Vienna rescuers at the gate with equipment applied chemical

cardioversion with beta blocker and digoxin with success and referred the lady to the cardiovascular hospital. Acute ECG was without any other pathology. The patient also visited another specialized cardiologist and again, no pathology was found and her case was diagnosed as "Caffeine induced supraventricular tachycardia". Patients with extremely low BMI shall avoid high volumes of drinks with caffeine, such as coke, coffee, etc.

Case 2 - Myocardial infarction with emergency landing

On a Swiss Air flight with 220 passengers from Nairobi to Zurich (overnight flight) a Myocardial infarction occurred with devastating consequences to other passengers. A sudden asystole occurred in a 60 year old male passenger. Incidentally present, an Anesthesiologist used AED and made cardioversion for the patient. As there was a need for emergency landing, the pilot had not enough time for emptying all the tanks with gasoline and damaged the plane's wheels during the landing in Addis Ababa. The patient was immediately transported to Addis University Hospital and survived. However, the plane was unable to take off so all the passengers had to wait about 48 hours for another aircraft. One patient had hysterical paroxysm as he was about to miss

an important court session in Zurich. After sedation with benzodiazepines, his state was improved. This is an example, how one medical condition can cause significant economic losses and irreplaceable logistical consequences for many people.

Case 3 - Food poisoning with emergency landing

Due to severe turbulence, passenger flight from Boston to Los Angeles was forced to make an emergency landing in Chicago. The turbulence was caused by 20 passengers in First Class, who simultaneously, urgently needed to use toilet due to acute watery diarrhea. The virus was determined as Norovirus (NW1), in the so called "seafood platter", where the shrimps were contaminated during the preparation by a cook who was working for an unlicensed company. Some of passengers were kept fastened by safety belts to the seats and asked to defecate in the seat rather than to group on the one side of the plane. The pilot appropriately indicated emergency landing and had enough time to empty the tanks to minimize damage to the aircraft. Apart of Norovirus, staphylococcal toxin or ETEC E. coli or Shigella spp. were considered as potential causes of the outbreak which fortunately did not cause the aircraft to crash, but ended by safely landing.

Case 4 - Acute alcoholic intoxication with psychotic attack

A group of 15 football fans boarded a flight from Kosice to Bratislava (a 40 minute length), with moderate alcohol intoxication. Boarding, one of the passengers attacked the pilot, but the pilot didn't eject the passenger from flight nor do a breath-test. About 20 minutes into the flight, at an altitude of 5.5 km, the passenger suffered a panic-psychotic event and was trying to

force land the aircraft by opening the emergency exit. The other drunk fans were trying to assist. In 15 minutes an Emergency Landing was completed at the nearest airport.

Discussion and conclusions

Cardiovascular and cerebrovascular events are responsible for 50-66% of all deaths on board flights. The vast majority of acute emergencies on airplanes are of cardiovascular origin. In these cases, especially when MI is present, emergency landing is always indicated. In case of asystolia, each aircraft should be equipped with AED (automatic defibrillator) and cardioversion is indicated. Oxygen is also available on aircraft.

Diabetic complications are the second most common inflight medical events. Hypo or hyperglycemia may result to coma when not treated immediately. Fortunately, both types of events are preventable with simple methods. In hypoglycemia, oral administration of coke or any other sweetened liquid is recommended if the patient is awake. When in coma, intravenous administration of glucose (10%) is recommended. In hyperglycemia, patients are obliged to carry their insulin devices with them at all times. Administration of insulin is usually easy when using pens or pumps.

Other acute emergencies may include deterioration of psychiatric conditions, such as panic psychotic attacks, intoxications with alcohol or food, infectious diseases and gastrointestinal disturbances all mainly during long flights.

Medical emergencies occur in approximately 1 out of 100 flights. In conclusion, crews always ask if there is a doctor on board (or any other medical personnel) to seek action or advice. However, crews should also be trained in the basics of first aid, including cardiopulmonary resuscitation. There should always be AED and equipment for basic first aid on board, at least on big

aircraft. In some cases, emergency landing is not required when first aid is quickly delivered and the patient is stabilized.

References

1. GENDREAU MA, DEJOHN C (2002) *Responding to Medical Events during Commercial Airline Flights*. N Engl J Med 2002; 346:1067-1073 April 4, 2002 DOI: 10.1056/NEJMra012774.
2. ZIAKOVA E, TANHAUSEROVA, M (2015) Evaluation of postural stability using the electronic phyaction balance platform in patients with vertebrogenic disorders. In: Rehabilitácia ISSN 0375-0922, Vol. 52, 2015, No 4, p. 204-216.
3. NABLE JV, TUPE CL, GEHLE BD, BRADY WJ (2015) *In-Flight Medical Emergencies During Commercial Travel*. N Engl J Med 2015;373:939-945.
4. DEHART RL (2003) *Health issues of air travel*. *Annu Rev Public Health*. 2003;24:133-51. Epub 2002 Oct 23. Review. PMID: 12428033.