Inflight Emergency

Flight LH 432, Frankfurt to Chicago

Case reports

Medical Emergency on board SIX TIMES

• Hypoxia/SOB: ~75 yo F, Russian speaking, c/o moderate SOB
• Vitals signs: normal BP + Pulse, SpO2 82% on RA
• Physical exam: CTAB, rrr, no murmurs à ???
• Chronic BIL LE edema, no calf tenderness
• EKG via AED (NSR), Glucose ~150 mg/dl
• IV placement, O2 therapy and continuous SpO2
• SOB improving

Lightheadedness

• ~70 yo Male, ruptured AAA 3 weeks prior, 12 days of intubation postop, s/p discharge from hospital the day before
• Recurrent Lightheadedness with ambulation
• Vital Signs + Physical Exam + Glucose border line normal
• Did not feel comfortable to cross the Atlantic ocean
• Ground based medical service agreed
• Extra stop in London

Syncope/Presyncope

• Collapsed ~80 yo Female, painful stimulus to arouse, no significant PMH per husband.
• Took Diphenhydramine for the first time in her life.
• Physical Exam: roughly normal
• Vital Signs: mild Hypotension (supine), otherwise normal
• IV placement, 1000 ml NS 0.9%, moved to 1st class
• Allows supine position, doing well

Other cases

• Two cases of motion sickness with vomiting
• Orthostatic Presyncope treated with oral fluids

Medical assistance was requested SIX TIMES

Two doctors on board

Intensive Medicine Attending

Case reports

NOISE

Gas Expansion

2) Boyle’s law: Gas volume increases with decrease of pressure. For example, the volume of 100 mmHg pressure increases to 150 mmHg pressure. The volume increases to 200 mmHg pressure.

Cabin Air quality

50% of air recirculated
50% is heated and compressed outside air
Humidity: 0-10% à exacerbation of RAD/Asthma, Dehydration
Air filters exist, but contaminants remain (exhaust particles)

HypopEpsilonPhilia?

Deep vein thrombosis

• no definitive evidence that air travel increases risk of DVT
• Flights >8 hours might increase risk of DVT, if additional risk factors

Hemoglobin Physiology

Cardiovascular and neurological conditions
**Equipment**

1. **Diagnostic**
   - Sphygomanometer
   - Stethoscope
   - AED
   - Pulse oximeter
   - Glucometer
   - Thermometer

2. **Airway**
   - Oropharyngeal tubes (3 sizes)
   - Self-inflating manual resuscitation device
   - Ventilation masks (3 sizes)
   - Laryngoscope (MAC 2,3)
   - ET (3-7.5)
   - Stylets + lubricant
   - Magill forceps
   - Manual suction pump
   - Suction catheters

3. **Medications**
   - Aspirin
   - Antihistamine (PO+IV)
   - Asthma inhaler
   - Atropine
   - Epinephrine (1:1,000 + 1:10,000)
   - Glucose (D50%)
   - Lidocaine
   - NSAID
   - NTG (PO)

Roughly 30 additional meds including Ketamine, Diazepam, Midazolam, Haloperidol

**Ground based medical services**

- Medical information + Decision making
- Invaluable information about closest facilities!

**Limitations**

- NOISE → Communication, Stethoscope
- SPACE → difficult to work/position/transport
- PRIVACY → Blankets
- LIGHT

**Resources + Limitations**

**Crew + Passengers**

- Crew: trained to assist, USE OF AED
- Passengers: H&P (Interpreter/Situation), hold IV bags/blankets

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**Medico-Legal Considerations**

- Introduction, H&P, consent, document in writing
- Communicate with Crew + Ground based medical services
- Give honest recommendation
- Treat according to your skill set
- Some airlines require flight personal to handle AED
- Do not pronounce patients officially dead
- DO NOT FEAR LITIGATION FOR HELP

Aviation Medical Assistance Act

"An individual shall not be liable for damages in any action brought in a Federal or State court arising out of the acts or omissions of the individual in providing or attempting to provide assistance in the case of an in-flight medical emergency unless the individual, while rendering such assistance, is guilty of gross negligence or willful misconduct."

"Other counties might prosecute the DENIAL of help"
Conclusions

- Be mentally prepared to be asked for help
- Anesthesiologists have an excellent skill set
- Do not worry about LITIGATION
- Patients and Crew are thankful
- Getting drunk should be the last resort

References
3) http://www.high-altitude-medicine.com/SaO2-table.html
5) Aviation Medical Assistance Act (1998)
6) SGB, parapgraph 323c