

Autonomic Dysreflexia: A Frequent Cause of Death

Incidence of Death Related to Autonomic Dysreflexia in SCI Population

Study Design:
Retrospective Cohort

Setting: VA SCI Center

Participants: 702 veterans
with SCI at T6 and above

Results: Over 4936 total
years of follow up, there
were **5 deaths** associated
with Autonomic Dysreflexia

Conclusions:

- High rate of death: 101 deaths per 100,000 person years
- Mechanism included hemorrhagic stroke and arrhythmia
- Some cases were not managed according to guidelines
- Prospective research is needed

AIS Grade



- A
- B
- C
- D
- E

Case 1:
54-year-old male with C4 AIS A traumatic SCI, 17 years since injury, baseline SBP of 90 mmHg. Presented to hospital for bowel impaction and elevated BP at home, for which he had been using nitroglycerin and clonidine. Symptoms of headache, NV, BP was 191/115 with HR of 115. While AD was noted in PMH, ED doctor characterized problem as "hypertensive urgency" and patient was not given nitroglycerin, nifedipine or clonidine. Rectal exam was performed and NG tube was placed. Patient became unresponsive and apneic, EKG showed pulseless electrical activity, patient was resuscitated with CPR, but was removed from life support after 5 days related to anoxic brain injury.

Case 2:
40-year-old male with C5 AIS B traumatic SCI, 18 years since injury with average SBP of 120, admitted to SCI hospital for long term care. One evening, noted to be in AD with BP of 190/110, HR of 66. Nurse followed hospital's AD protocol, including nitroglycerin and nifedipine, but pressures remained highly elevated, at 227/127. While suprapubic catheter was being changed, patient had large, fatal intracerebral hemorrhage.

Case 3:
65-year-old male with C7 AIS A traumatic SCI, 10 years since injury with baseline SBP in 120s while on amlodipine for HTN. Presented with neck pain, admitted for cardiac workup, which was negative for elevated troponins or EKG changes. On 2nd day of admission, BP was 172/85 with headache, treated with ibuprofen, no antihypertensive agents. AD was noted on PMH, treating physicians were not actively managing it. Next day, patient continued to have elevated BP, up to 182/100, with coughing and shortness of breath. Patient later became confused, drowsy, given hydralazine. Tale noted that patient's pulse was dropping and patient found pulseless, EKG demonstrated PEA. Patient resuscitated with CPR, but CT demonstrated fatal cerebellar parenchymal hemorrhage.

Case 4:
68-year-old with C4 AIS A traumatic SCI 46 years prior whose baseline SBP was about 100 mmHg was hospitalized for treatment of an ischial ulcer was found to have an increased BP of 154/73 mmHg and tachycardia to 118 bpm with accompanying nausea and evaluated for AD. The patient was given ondansetron, but no antihypertensive agents. An abdominal x-ray showed stool burden, so the patient was given an enema. The patient then became increasingly hypoxic and an EKG demonstrated sinus tachycardia, but a repeat EKG demonstrated right bundle branch block. Soon afterwards, patient became hypotensive and then became pulseless. CPR was initiated but was unsuccessful.

Case 5:
67-year-old male with C5 AIS D traumatic SCI, 2 years since injury with comorbid Parkinson Disease and dementia. Patient was being transported to hospital for respite care. Found dead on arrival, last seen normal four hours prior. Autopsy was performed by county medical examiner and cause of death was reported as autonomic dysreflexia. No other information was available within medical chart.