Guest Lecture

Delirium in Elderly

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An 86 year old man is brought into your emergency room by his daughter in law. She tells you that he seems completely confused. He was up all night and he agitated and also made the bathroom floor and walls dirty. He is also a little unsteady on his feet. He was generally well until 3 days ago. She is worried that he has dementia. He says that 2 weeks ago he was keen enjoying good social interaction with his retired friends, but now he is totally a different person.

The past medical history is notable for, hypertension. He does not drink alcohol, and he is an ex-smoker.

His medications include: Nifedipine 30mg BID (for hypertension), Shelcal (Calcium and Vitamin D), Neurobion (Multivitamin).

What is Delirium ?

The diagnostic criteria for delirium are:

1. Disturbance of consciousness with reduced ability to pay attention.
2. A change in cognition or perceptual disturbance not better accounted for by pre-existing dementia.
3. The disturbance develops over a short period of time and tends to fluctuate.
4. History, physical and ancillary tests indicate the disturbance is caused by a medical illness.

The core features are acute onset, fluctuating course and inattention. Additional features include altered Alertness, Cognitive deficits, Poor comprehension, Psychotic features and Sleep wake cycle disturbance.

On examination the patients vital signs are HR: 90, BP:130/84, RR: 18, Temp 37ºC, O_2 99%RA His skin is slightly flushed. Ears, nose and throat exam is normal. The respiratory exam is normal, there is no wheeze and good air entry to all fields. Cardiac exam, abdominal exam and head & neck exam are all normal. There are no focal neurological signs but you note that the patient is unsteady on his feet, and disoriented to time and place.

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How to tackle Differential Diagnosis?

There remains a broad differential diagnosis for altered mental status in the elderly patient.

We have to consider every possible medical condition in the evaluation of the elderly patient with altered sensorium. Unfortunately it is far too broad to guide a work-up, and at the same time leaves out causes of altered mental status (Acute Coronary Syndrome may, for instance, present as confusion in an elderly patient).

In reality a patient centered work-up is required. We need to ask; Is this inter-cranial catastrophe? Is this trauma? Is this Infection? Is this encephalopathy or metabolic derangement? Is this polypharmacy or drug interaction ? Is this a systemic illness manifesting as acute confusion ? Is this dementia or a psychiatric process?

A careful initial evaluation can guide an initial work-up designed to rule in or out important causes of Delirium that have high mortality and morbidity.

In this patient we order some investigations; ECG, CBC, electrolytes, Urea, Creatinine, Lactate, Troponin, Urinalysis, Chest x-ray, and CT head. All of these investigations are within normal limits. Except CT head which reveals a Sub dural haematoma. He was promptly referred for neurosurgical intervention.

Delirium in elderly is common and serious. Roughly 1 in 5 dead in a month and is associated with long term cognitive impairment. It is distressing to family and patients. It is associated with high healthcare and social cost. In the year following an episode of delirium 20% of patients were admitted to long term nursing homes (western

population), and 10% were dead. Delirium is also associated with cognitive injury and many patients never regain their pre-morbid cognitive state. It is unclear to what extent these outcomes are the result of delirium versus delirium being a marker of poor physiological reserve.

How delirium develops

Anything that interrupts normal brain function can cause delirium. Inflammation or toxic substances can interfere with brain function, for example, by disturbing the neurotransmitters that communicate between nerve cells. Though the causes of delirium are complex, one major pathway involves the neurotransmitter acetylcholine. If blood sugar levels fall too low or the brain doesn't receive enough oxygen, acetylcholine levels plummet.

Pathophysiology is not proven and is likely that multiple mechanisms are involved.

There is a new screening test which is being promoted to standardize the assessment of Delirium. It is called 4AT. Further details are available at www.the4AT.com

Management is to Check for Acute Life threatening illness. Commonly there could be an underlying Septic Shock requiring Rapid Medical and Nursing input. In these situations Emergency protocols of Airrway/ Breathing/ Circulation/ Pulse/ BP/RR/Saturations/Temp/Glucose/DRUGS should be followed. Next is to treat precipitating CAUSES and Optimize Brain function.

Incriminated drugs should be withdrawn wherever possible. In the cases of opiates causing delirium, it may be possible to reduce the dose or change to an alternative. Biochemical derangements should be corrected promptly. Infection is one of the most frequent precipitants of delirium. If there is a high likelihood of infection (eg abnormal urinalysis, abnormal chest examination etc.), appropriate cultures should be taken and antibiotics commenced promptly, selecting a drug to which the likely infective organism will be sensitive.

In addition to treating the underlying cause, management should also be directed at the relief of the symptoms of delirium. The patient should be nursed in a good sensory environment and with a reality orientation approach, and with involvement of the multi-disciplinary team.

The use of sedatives and major tranquillisers should be kept to a minimum. All sedatives may cause delirium, especially those with anticholinergic side effects. Many elderly patients with delirium have hypoactive delirium (quiet delirium) and do not require sedation. The main aim of drug treatment is to treat distressing or dangerous behavioural disturbance [e.g. agitation and hallucination]. The preferred drug is Haloperidol 0.5 mg. orally which can be given up to two hourly. A maximum dosage of 5 mg [orally or IM] in 24 hours is general guide but may need to be exceeded depending on the severity of distress, severity of the psychotic symptoms.

Key Learning Points

- Delirium is common in Elderly and has a high mortality
- New screening tool for Assessment (the4AT.com)
- Management is to identify and treat the cause.