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Drop attacks in the elderly

By Peter Tenni

You undertake a home medicines review for a 78-year-old female. Her past medical history includes:

- severe peripheral vascular disease (requiring an axillofemoral bypass and a femoral artery bypass)
- severe osteoarthritis (requiring total hip replacement on the right-hand side and lumber fusion)
- aortic stenosis.

Also supplied with the referral were the following laboratory tests and observations.

Lab Test	13 months ago	8 months ago	Normal range
Sodium	138	139	134-146mmol/L
Potassium	4.6	6.1	3.4-5.3mmol/L
Urea	8.8	8.9	8-8.0mmol/L
Creatinine	95	100	45-90mcmol/L
Biliribin	9	6	2-20micromol/L
ALP	76	83	30-120U/L
Gamma GT	12	21	5-35U/L
ALT	6	11	<31U/L
Total protein	66	70	64-83g/L
Albumin	40	42	34-48g/L
Glucose (fast)	4.8	4.6	<5.5mmol/L
Haemoglobin	99	121	115-165g/L
Mean cellular volume	93	94	80-100fL

After interviewing her at her home the following list of medications is confirmed:

- Aspirin 100mg daily
- Atorvastatin 40mg at night
- Esomeprazole 20mg in the morning
- Ezetimibe 10mg at night
- Glyceryl trinitrate spray 400mcg when required (uses this approximately once every couple of months)
- Meloxicam 7.5mg in the morning
- Metoprolol 50mg twice-daily (commenced two months ago)
- Paracetamol 665mg one or two when required (not taking these)

She tells you that she is reasonably well, with her arthritis pain well controlled, no gastrointestinal symptoms and is sleeping reasonably well.

- Paracetamol 1000mg each morning
- Prednisolone 5mg in the morning (for polymyalgia rheumatica)
- Temazepam 10mg at night when required (uses this regularly).

You are able to determine the pattern of her blood pressure readings and changes in her antihypertensive management over the past several months; these are shown below. Her current blood pressure is well controlled at 135/70mmHg.

9 months ago	190/90mmHg	Was taking irbesarten 150mg daily
8 months ago	195/90mmHg	Changed to irbesarten/ hydrochlorothiazide daily
6 months ago	163/73mmHg	Changed irbesarten to 300mg daily, removed thiazide
3 months ago	160/60mmHg	Continued irbesarten 300mg
2 months ago	150/60mmHg	Changed to metoprolol

She tells you that she is reasonably well, with her arthritis pain well controlled, no gastrointestinal symptoms and is sleeping reasonably well. Her major concern is that over the

past six months, she had had what she calls 'drop attacks'. She says that these are not associated with dizziness, and that she had five or six of these episodes over a period of four months. They have improved over the past couple of months, with only one episode in the past two months. She has seen her GP about these, and told him that it might be 'something to do with her heart'. She thinks that the change of antihypertensives might have been intended to improve this problem.

Clinical assessment

Although there may be other issues to address in this patient's therapy (e.g. GI bleeding risk with aspirin/*Mobic*/prednisolone), the focus of this review will be on the drop attacks.

Drop attacks are sudden spontaneous falls while standing or walking, with complete recovery in seconds or minutes. There is usually no recognised loss of consciousness and the event is remembered. It is important to consider these as a symptom, not a diagnosis. They can have diverse causes.

In many instances, the cause of the drop attack is never definitively established. Common causes include cardiac syncope or poor circulation to the brain or a combination of these. Less common causes are seizures, problems with the inner ear or due to psychological problems.

Parry and Kenny examined a large series of elderly patients with a high frequency of drop attacks (average 6.1 drop attacks in the six months before presentation).[1] They found that the symptom was poorly investigated and that the consequences in the group examined were significant. Almost one-third of their 93 patients had previous fractures and over half had soft tissue injuries requiring medical attention. In addition, one-third had been hospitalised because of falling. The authors note that the investigation of these admitted patients with regard to a possible preventable cause of their syncope was poor. They also noted that in the series of patients they investigated, 90% were able to be assigned a cause of syncope. The importance of this is that once the cause is identified, the potential treatment can be targeted.

The study found the prevalence of different causes of drop attacks in the elderly (predominantly women) to be as shown in the table below.[1]

Diagnostic class	n (%)
Cardiovascular	49 (53)
Neurological	27 (29)
Gait and balance	17 (18)
Drug	10 (11)
Miscellaneous	5 (5)
Unexplained	9 (10)

In this patient there are a number of contributing factors. Firstly, she is known to have significant peripheral vascular disease and arterial vascular disease (aortic stenosis as well as two previous bypass procedures). It is likely that she also has some carotid vascular damage and that cerebral perfusion may be partially compromised. Secondly, she has a history of aortic stenosis, and an increase in dose of irbesarten could have resulted in significant reduction in blood pressure and predisposed her to the drop attacks. This seems less likely as there were no postural hypotensive symptoms, and the blood pressure readings from around that time were normal, and the GP would likely have determined this at examination.

Thirdly, and perhaps most importantly, the role of her drug therapy needs to be considered. At the time when her drop attacks were most significant, she was taking 300mg daily of irbesarten (increased from 150mg because of poor blood pressure control). *Prior* to the increase a potassium level of 6.1mmol/L was recorded and no further laboratory tests are available at the time of review. It is possible (even likely) that the increase in the angiotensin 2 blocker dose would further increase the potassium level. Hyperkalaemia may cause a range of symptoms, but the primary concern is the potential for a range of bradyarrhythmias, which if present, could predispose to drop attacks. The combination of these two factors would possibly explain the pattern of drop attacks, particularly the improvement since the cessation of the irbesarten.

Despite this improvement, the use of a beta blocker in a patient with significant peripheral vascular disease is probably not ideal, and alternative antihypertensive agents may be considered. Given the fact that she is using occasional glyceryl trinitrate, she may also have mild ischaemic heart disease, thus any antihypertensive choice should also assist in this area.

Actions and recommendations

Include in your report details of the likely cause of her drop attacks and advise that her current electrolyte levels be determined. Assuming these are normal, it would also be reasonable to consider a change of antihypertensive agent to a calcium channel blocker. This may also have benefit for her peripheral vascular disease and possible ischaemic heart disease.

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References

1. Parry SW, Kenny RA. Drop attacks in older adults: systematic assessment has a high diagnostic yield. J Am Geriatr Soc 2005;53:74-8.

CPD questions are on pages 844 to 846.