

Connecting Sound Waves: a typical case in the day of a pharmacist!

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Objective:

To describe a clinical case that demonstrates the value of pharmacists across multidisciplinary teams and their role in improving patient outcomes across the care continuum.

Clinical Features:

A 78-year-old male presented with hyperosmolar hyperglycaemia state (HHS) with the following clinical features:

-  Blood sugar level of 60mmol/L (Ref. Range: 3.5 – 7.8mmol/L)
-  Blood ketone of 5mmol/L (Ref. Range: >0.6mmol/L)
-  Serum osmolality of 408mmol/kg (Ref. Range: 275 – 295mmol/kg)
-  Dehydration and altered mental state

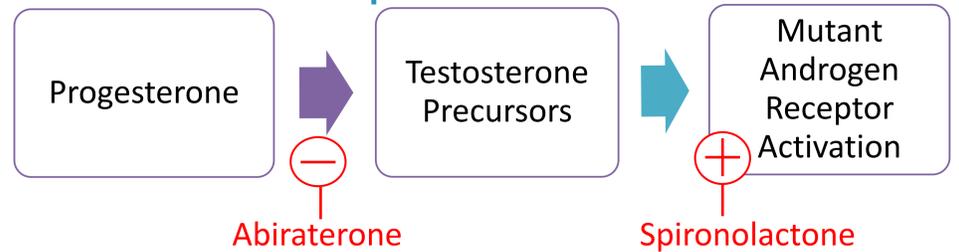
Figure 1: Past Medical History and Medications on Admission Prior to Pharmacist Intervention

Past Medical History	Medication Prior to Admission	Medication on Admission
Metastatic castration-resistant prostate cancer	Abiraterone 500mg Take TWO tablets, swallowed whole, each morning	Continued
	Prednisolone 5mg Take TWO tablets each morning	Continued
	Leuprorelin injection 45mg Administered every 6 months	Not applicable to admission
	Denosumab 120mg/1.7mL Administered every 6 months	Not applicable to admission
Pulmonary Embolism (May 2019)	Enoxaparin 100mg/mL Inject the contents of ONE prefilled syringe ONCE daily	Charted as 40mg mane
Hypertension	Lercanidipine 20mg Take ONE tablet each morning	Continued
	Spiroinolactone 25mg Take ONE tablet each morning	Continued
	Atenolol 50mg Take ONE tablet each morning	Continued
Hypercholesteremia	Rosuvastatin 10mg Take ONE tablet each night	Continued

Literature review:

Spiroinolactone can reduce abiraterone efficacy by binding to and activating androgen receptors. This can lead to clinical failure and disease progression of castration-resistant prostate cancer (1-5).

Figure 2: Reduction of abiraterone efficacy by concomitant use of spiroinolactone



Pharmacist Intervention, Case Progress and Outcomes:

The patient was diagnosed with type 2 diabetes and commenced on insulin and metformin in the context of HHS. Pharmacist intervention resulted in the commencement of antibiotics in the setting of fevers; a prednisolone dose reduction, endorsed by his oncologist, to minimise adverse metabolic effects; enoxaparin dose increase to the patient's usual therapeutic dose; cessation of atenolol in the setting of hypotension and concerns around its potential to mask hypoglycaemic events given the patient's poor understanding of hypoglycaemia; and cessation of spiroinolactone to prevent potential patient harm from identified drug-drug interactions. Prior to ceasing spiroinolactone, the Oncologist outpatient notes reported inadequate disease management with the current regimen. Upon pharmacist request the team collaborated with the patient's Oncologist, who was unaware of the commencement of spiroinolactone for hypertension management by the patient's General Practitioner. On discharge, the pharmacist discussed the medication changes with the patient and based on patient request, arranged for a dose administration aid. To ensure continuity of care, the pharmacist also provided documentation in the discharge summary and outpatient notes of all medication related changes.

Figure 3: Outcomes of Pharmacist Interventions

-  Commencement of antibiotics
-  Enoxaparin increased to therapeutic dose
-  Cessation of spiroinolactone and atenolol
-  Prednisolone dose reduction
-  Initiation of a dose administration aid

Conclusion:

Pharmacists create and connect sound waves across multidisciplinary teams, ensuring involvement of the patient, to help improve outcomes and continuity of care.

References:

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