also assessed. As secondary variables, we studied the main therapeutic groups prescribed with DR and PR-QT and the concomitance of their prescriptions along with a history and/or cardiac pathologies. Demographic, clinical and analytical data were obtained from the electronic clinical history and treatment data from the electronic prescription programme.

**Results**
As of 4 July 2019, 87 patients with active electronic prescriptions in a NH were selected. Average age was 66 years (52–101), 55.2% (48/87) were men and 70% were assisted (70/87). Among these patients, 13% were being treated with a DR-QT drug (11/87) and 13% with a PR-QT drug (11/87). Two patients were receiving a DR-QT and a PR-QT drug. Two patients were receiving two PR-QT drugs. The main therapeutic groups of DR-QT drugs were antidiabetics (38%), antidepressants (31%), genitourinary (9%). The main therapeutic groups of PR-QT drugs were antipsychotics (45%), antipsychotics (36%), antiarrhythmics and other (9%). The main therapeutic groups of PR-QT drugs were antipsychotics (38%), antidepressants (31%), genitourinary (15%), musculoskeletal and others (8%). Three patients treated with DR-QT drugs and six patients treated with PR-QT drugs had a history and/or cardiac pathologies. No patient receiving a DR and a PR drug had a history and/or cardiac pathologies. Two patients who were receiving two PR-QT drugs had a history and/or cardiac pathologies, mainly arterial hypertension.

**Conclusion and relevance**
One-quarter of institutionalised elderly patients in a NH were being treated with DR and/or PR-QT drugs, in almost half of the cases with a history and/or cardiac pathology. The main therapeutic groups involved were antidepressants and antipsychotics.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**

No conflict of interest.

---

**5PSQ-014**

**RETROSPECTIVE EVALUATION OF RESUSCITATION MEDICATION UTILISATION IN HOSPITALISED ADULT PATIENTS WITH CARDIAC ARREST**

1JTenny*, 2JHY Yip, 3RH Yee, 4BCY Wong, 5KKC Hung, 6RPK Lam, 7DKW Wong, 8WT Wong. 1The Chinese University of Hong Kong, School of Pharmacy, Shatin, Hong Kong; 2Prince of Wales Hospital, Pharmacy, Shatin, Hong Kong; 3Pamela Youde Nethersole Eastern Hospital, Pharmacy, Hong Kong, Hong Kong; 4Prince of Wales Hospital, Accident and Emergency Department, Shatin, Hong Kong; 5Hong Kong University, Accident and Emergency Department, Hong Kong, Hong Kong; 6Prince of Wales Hospital, Intensive Care Unit, Shatin, Hong Kong

Background and importance Early medication administration in cardiac arrest improves outcomes. Non-compliance with advanced cardiovascular life support (ACLS) guidelines, including errors in medication administration, have been shown to decrease return of spontaneous circulation (ROSC) and cardiac arrest survival.1 2

Aim and objectives The primary objective was to evaluate the association between adrenaline administration in inhospital cardiac arrest (ICHA) patients with non-shockable rhythm and patient outcomes. The secondary objective was to assess compliance of adrenaline and amiodarone administration in accordance with ACLS guidelines.

Material and methods ICHA patients aged ≥18 years were identified from the resuscitation registry of 2016 of two large public hospitals and categorised according to their initial rhythms. For patients with non-shockable rhythms, the associations between ICHA outcomes, ROSC, survival to discharge and time of epinephrine administration were analysed by logistic regression.

**Results**
Among 349 patients with non-shockable rhythm, median time to epinephrine administration was 3 min (IQR 1–6 min). Early epinephrine administration (<5 min), compared with late epinephrine administration (>5 min), was significantly associated with the rate of ROSC (49.2% vs 34.9%; adjusted OR 1.630; 95% CI 1.008–2.635, p=0.046). Time to epinephrine administration (as continuous interval) was significantly associated with the rate of ROSC (p=0.002) and survival to discharge (p=0.029). After adjusting for potential confounding factors, increased ROSC remained significant but the survival to discharge lost significance.

**Conclusion and relevance**
Our study found that time of epinephrine administration was significantly associated with better results in ROSC and survival to discharge in ICHA patients with non-shockable rhythm. When we divided ICHA patients with non-shockable rhythms into early and late administration groups, early epinephrine administration was associated with significantly improved ROSC but not survival to discharge after adjusting for potential confounding factors. Compliance rate with ACLS guidelines was >80% regarding epinephrine and much less for amiodarone. Therefore, clinical pharmacy services should focus on methods to enhance amiodarone usage in cardiac arrest.

**REFERENCES AND/OR ACKNOWLEDGEMENTS**


No conflict of interest.

---

**5PSQ-015**

**COMPARING THREE CRITERIA FOR ASSESSMENT OF WHAT MEDICINES INCLUDED IN NATIONAL HOSPITAL FORMULARY ARE CLASSIFIED AS POTENTIALLY INAPPROPRIATE MEDICATIONS FOR OLDER PATIENTS**

1D Rodrigues, 2MT Herdeiro, 3A Alcobia*, 4JP e r t a , 5M Morgado, 1FRoque. 1Instituto Politécnico Da Guarda, Unidade De Investigação Para O Desenvolvimento Do Interior, Guarda, Portugal; 2Instituto De Biomedicina-Ibiamed, Departamento De Ciências Médicas Da Universidade De Aveiro, Aveiro, Portugal; 3Hospital Garcia De Orta, Pharmaceutical Services, Almada, Portugal; 4Unidade Local De Saúde Da Guarda, Pharmaceutical Services, Guarda, Portugal; 5Centro Hospitalar Universitário Casa De Beira, Pharmaceutical Services, Covilhã, Portugal

Background and importance Some medicines are described as potentially inappropriate medications (PIM) for older patients. At least one PIM is regularly prescribed in 25–56% of hospitalised elderly patients,1 2 and have been associated with adverse drug reactions in this population.

Aim and objectives To identify what medicines classified as PIM by three different tools are present in national hospital formulary of medicines (NHFM) and to check what information, if any, is in the summary of product characteristics (SmPC) about precautions in older patients.

Material and methods A search (September 2019) of the Portuguese NHFM, through the National Medicines and Health Products Authority (INFARMED) website, was made for all medicines included in the EU(7)-PIM list, in the STOPP V2 criteria and in the 2019 Beers criteria. For each PIM found in the NHFM, the SmPC was analysed to check the recommendations made for older patients.
Tolvaptan associated creatine kinase elevation in two patients with autosomal dominant polycystic kidney disease

1M Larrosa García*, 2RP Bury Macias, 2I Agraz Pamplona, 1BJ Montoro Ronsano. 1Val D’Hebron University Hospital, Clinical Pharmacy, Barcelona, Spain; 2Val D’Hebron University Hospital, Clinical Nephrology, Barcelona, Spain

Background and importance Auto-somal dominant polycystic kidney disease (ADPKD) is a genetic disorder that causes kidney damage; the treatment goal is to postpone renal failure. The only specific treatment approved for ADPKD is tolvaptan (Jinarc, Otsuka Pharmaceutical), an arginine-vasopressin receptor antagonist taken orally—45 mg in the morning and 15 mg in the evening.

Aim and objectives To present two cases of tolvaptan associated toxicity.

Material and methods The cases were detected and monitored by a nephrologist during outpatient visits in our centre, and laboratory tests were done during this time. After a suspicion of tolvaptan associated toxicity, the electronic clinical records and laboratory tests were reviewed.

Results Case 1: a 43-year-old man with ADPKD, whose mother had ADPKD, had been using losartan, carbonate calcium, manidipine, valsartan and hydrochlorothiazide. He started tolvaptan at the lowest dose. It was well tolerated and weeks later creatine kinase (CK) plasma levels increased dramatically (table 1). Tolvaptan was stopped and CK levels recovered to baseline levels. The patient reported he felt better after treatment cessation.

Case 2: a 41-year-old man with ADPKD, whose mother and siblings were also affected, was treated with enalapril, amlopidine and allopurinol. He started tolvaptan at the lowest dose with good tolerance. An increase in CK was detected, treatment was stopped (all other treatments continued) and CK plasma levels declined (table 1).

Neither patient No 1 nor patient No 2 showed clinical symptoms. They reported that they had not taken other treatments and had occasionally performed moderate exercise, as usual. In the absence of other justifications, according to the Naranjo causality assessment, it was probable (6 points) that tolvaptan caused hyperCKaemia.

Conclusion and relevance These are the first cases of tolvaptan induced hyperCKaemia reported. HyperCKaemia could be common in ADPKD patients taking tolvaptan and might be underestimated. It is advisable to monitor CK serum concentrations in these patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.