Glycaemic control and clinical outcomes in Chinese institutionalised older adults

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Background: In older adults with multiple comorbidities and functional limitations, the harms of intensive glycaemic control may outweigh the benefits. Recent diabetes guidelines suggested that glycaemic control should be individualised and less stringent in frail older adults. Nonetheless, evidence-based data on institutionalised older adults are lacking. **Objectives:** Our study aimed to provide a reference for the recommended HbA1c level in institutionalised older adults with diabetes mellitus. **Methods:** A cohort of Chinese older adults (≥65 years of age) with diabetes who lived in a residential care home and had the HbA1c measured during 1 January 2013 to 31 December 2013 were retrospectively reviewed. They were divided into 4 groups according to their HbA1c level: <7.0%, 7.0-8.4%, 8.5-9.9%, and ≥10.0%. Baseline characteristics included demographics, clinical, functional and laboratory parameters and study outcomes (mortality and hospitalisation) were evaluated. **Results:** A total of 376 institutionalised older adults with diabetes (81.6±6.7 years of age, 62.2% female) were included. Most had multiple comorbidities (Charlson Comorbidity Index, 4.7±2.1; 62.2% vascular disease, 53.2% chronic kidney disease [stage 3 or above], and 43.6% dementia) and functional limitations (70.8% with impaired mobility, 10.9% on tube feeding). The overall 1-year mortality was 21.5%, whereas the 1-year hospitalisation rate was 1 (range, 0-4) per person-year. The lowest all-cause mortality and hospitalisation rate at 1 year were found in older adults with HbA1c level of 8.5-9.9%. Multivariate analyses showed that there was J-shaped association between HbA1c level and hazard ratio for all-cause mortality, and between HbA1c level and odds ratio of recurrent hospitalisation, with best outcomes in those with HbA1c level of 8.5-9.9%. Age (HR=1.05, 95% CI=1.01-1.10 per 1 year increase), presence of stage 5 chronic kidney disease (HR=3.43, 95% CI=1.36-8.66), and peripheral vascular disease (HR=2.72, 95% CI=1.35-5.50), mobility (chairbound/bedridden) (HR=3.69, 95% CI=1.89-7.21), polypharmacy (≥7 regular drugs) (HR=1.93, 95% CI=1.00-3.73), and albumin level (HR=0.86, 95% CI=0.81-0.92 per 1 g/L increase) were independent predictors of mortality. Among those with intensive glycaemic control (HbA1c level <7.0%), 55.9% (n=80) received glucose-lowering therapy with a high risk of hypoglycaemia (sulfonylurea and/or insulin) with a higher risk in those who were on tube feeding and had chronic kidney disease (stage 3 or above). **Discussion and Conclusion:** Institutionalised diabetic older adults with HbA1c level of 8.5-9.9% had lower 1-year all-cause mortality and hospitalisation rate. This study may provide a reference for the recommended HbA1c level in this population. Comprehensive geriatric assessment (including comorbidity, function, polypharmacy, and nutrition) should be considered to incorporate in the extended diabetic complication screening in this population. Our findings suggested that a substantial proportion of this population were potentially over-treated and de-intensification of drug treatment should be considered.

A prospective study of delirium and subsyndromal delirium in Chinese elderly medical patients

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Background: Delirium is prevalent in hospitalised elderly patients and is associated with numerous adverse outcomes. Subsyndromal delirium (SSD) is a condition characterised by the presence of symptoms of delirium but not fulfilling its criteria. There are limited studies about the prevalence and outcomes of delirium and SSD among Chinese elderly with acute medical problems. **Objective:** This study aimed to determine the prevalence of delirium and SSD and their outcomes in Chinese elderly who presented with acute medical problems to a general medical ward in a regional hospital in Hong Kong. **Method:** Patients were recruited from the acute general medical wards of Queen Mary Hospital from January 2014 to September 2014, and were classified into 3 groups: no delirium, delirium, and SSD, using the Confusion Assessment Method (CAM). SSD was defined by having more than one CAM symptoms, yet not fulfilled the criteria of delirium. Baseline demographics, co-morbidity according to Charlson Co-morbidity Index (CCI), Barthel Index (BI), Mini-Mental State Examination (MMSE), potential predisposing factors, and precipitating factors were collected at baseline. Subjects were followed up until discharged and then followed up for 12 months after discharge. Outcomes including all-cause mortality, hospitalisation, and number of new institutionalisation were recorded. **Results and Discussion:** 575 patients older than 65 years of age were recruited. 15.8% and 11.3% of patients were classified as delirium and SSD, respectively. Delirium was an independent predictor for death in the index admission (hazard ratio [HR]=1.71, 95% confidence interval [CI]=1.13-2.60, p=0.011), institutionalisation upon discharge from the index admission (odds ratio [OR]=25.76, 95% CI=7.04-94.29, p<0.001), and institutionalisation within 12 months (OR=5.36, 95% CI=2.19-13.10, p<0.001). SSD was an independent predictor of death within 12 months (HR=1.75, 95% CI=1.14-2.67, p=0.01). Among patients with resolved delirium or resolved SSD upon discharge, the mortality in the following 12 months did not differ from the mortality of patients with no delirium, indicating that efforts to recognise and treat patients with delirium and

SSD during hospitalisation might improve their outcomes. **Conclusion:** Delirium and SSD are common among Chinese elderly patients admitted to acute medial wards. They predict short- and long-term adverse outcomes. Prompt recognition and management of delirium and SSD might improve prognosis. Future studies to explore interventions targeting these groups of elderly patients are needed.

A case series study of atypical femur fracture in Kwong Wah Hospital

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Background: Bisphosphonates are the most common first-line therapy for the prevention and treatment of osteoporosis. Nonetheless, concerns have been raised about the long-term safety of bisphosphonates and atypical femur fracture. **Objective:** To conduct a case series study of the clinical characteristics of atypical femur fracture in a regional hospital in Hong Kong. **Methods:** All patients aged ≥60 years who were admitted to the orthopaedics and traumatology department of Kwong Wah Hospital from 1 July 2011 to 30 June 2014 with a diagnosis of bisphosphonates-related atypical femur fracture (AFF) were included. The history of osteoporosis, use of bisphosphonates, clinical presentations, radiological features of AFF, and treatments were collected retrospectively from medical records. Mobility status of patients was reviewed after 1 year. **Results:** Nine female and one male patients were included. The mean age was 76.5 years. Duration of bisphosphonates therapy ranged from 1.3 to >10 years. Up to 80% of patients have taken bisphosphonates for ≥10 years. 70% of them had prodromal thigh pain. 60% of the patients did not have the diagnosis of osteoporosis based on dual-energy X-ray absorptiometry (DXA). Moreover, 70% did not have regular medical consultations, and only 30% of patients had regular DXA done after the initiation of bisphosphonate. Three patients presented with bilateral AFF and totally 13 AFF were included; 46% were subtrochanteric fractures and 54% were femur shaft fractures. Eight AFFs were completed fractures, whereas 5 AFFs were incomplete fractures. 10 AFF required surgical fixation. Two patients defaulted follow-up after 1 year and one patient with renal transplantation was followed up by the renal team. For the 7 patients under our care, 6 were prescribed Teriparatide and 1 was put on strontium. All were ambulatory and 57% returned to premorbid mobility status after 1 year. **Conclusion:** 60% of the patients taking bisphosphonates did not have the diagnosis of osteoporosis based on DXA, and 70% of patient did not have regular follow-up after starting the drugs. In view of the risk of AFF with long-term use of bisphosphonate therapy, we recommended the cautious use of bisphosphonates and regular follow-up with DXA, and consideration of drug holiday if the use of bisphosphonates for 5 years in low-risk patients.

SUBMITTED FREE PAPER

A cross-sectional study of possible prescribing omissions and potentially inappropriate prescriptions of elderly patients in a convalescent hospital in Hong Kong

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Background: Hong Kong has an ageing population. Some elderly patients with multiple medical conditions are prescribed with multiple medications. In a local study conducted in 2010 at a medical specialist clinic, 65% of elderly patients were taking ≥5 medications and 10.8% were taking ≥10 medications. Polypharmacy increases the risks of adverse drug reactions. Potentially inappropriate prescriptions (PIPs) refers to the prescription of any medications to a patient where the risks of occurrence of adverse drug reactions, drug-drug interactions, drug-disease interactions outweigh the clinical benefits of that medication and when safer or more effective alternatives are available. Possible prescribing omissions (PPOs) refers to medications with clear evidence of clinical benefits which are not prescribed to patients without valid supporting reasons. Identification of PIPs and PPOs helps to improve clinical outcomes and quality of life of elderly patients. **Objectives:** To review the condition of PPOs and PIPs in elderly patients in Hong Kong. **Method:** This was a cross-sectional study conducted in a convalescent hospital in Hong Kong involving elderly patients (≥65 years of age). Demographics and medication profile were collected by reviewing information in clinical notes of index admission and past medical records. PPOs and PIPs were evaluated using the Screening Tool to Alert to Right Treatment (START) and the Screening Tool of Older People's Prescriptions (STOPP) (version 1), respectively. **Results:** 57 patients were evaluated. 39 (68%) patients had at least 1 PPO, and 28 (49%) patients had at least 1 PIP. Warfarin, statins, angiotensin-converting enzyme inhibitors, calcium and vitamin D supplements were the most common PPOs. Laxatives (as the commonest duplicate class prescriptions) and neuroleptic drugs (in patients prone to falls) were the 2 most common PIPs. 61.4% patients had polypharmacy, and 14% of patients were suspected to have adverse drug reactions. **Conclusion:** Medication-related problems are common in the elderly patients. PIPs and PPOs should be carefully evaluated in every elderly patient. START and STOPP are useful tools to review the appropriateness of prescriptions in elderly patients in Hong Kong.