Aim and objectives To determine the association between PDE5i exposure and incident dementia in PCa patients treated with ADT.
Material and methods We conducted a retrospective cohort study using the Chang Gung Research Database (CGRD) in Taiwan. We included PCa patients newly receiving ADT between 2009 and 2016. We conducted a three step matching and modified landmark approach to identify PDE5i users and non-users after ADT use. The landmark date was defined as 1 year following the start of ADT, and we defined PDE5i users as patients initiating PDE5i before and after the landmark date. We matched PDE5i users to non-users by (1) age, (2) prostatic specific antigen and (3) 1:4 propensity scores for comorbidity and co-medication. We followed the patients from the landmark date until the incident diagnosis of dementia, last date of clinical visit or 31 December 2019. We performed multivariate Cox proportional hazard models to compare the dementia risk between PDE5i users and non-users.
Results We included 4557 PCa patients starting ADT treatment, with a mean age of 69.5 (SD 7.0) years. After matching, we identified 161 PDE5i users and 644 non-PDE5i users. A total of 5.1 person years of PDE5i users and 4.6 person years of PDE5i non-users were included. Compared with non-users of PDE5i, PCa patients treated with ADT initiating PDE5i had a lower risk of dementia (adjusted HR=0.17, 95% CI 0.04 to 0.70) in the modified landmark analyses.
Conclusion and relevance PDE5i use in PCa patients treated with ADT was associated with a decreased risk of subsequent dementia. Future large scale studies are suggested to confirm our findings.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

5PSQ-197 CONTRAINDICATED DRUG–DRUG INTERACTIONS WITH PAN-GENOTYPIC DIRECT ACTING ANTIVIRAL AGENTS IN CHRONIC HEPATITIS C PATIENTS IN TAIWAN

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Background and importance Treatment of chronic hepatitis C (CHC) has become simpler and more effective since the introduction of pan-genotypic direct acting antiviral agents (DAA), but contraindicated drug–drug interactions (DDI) with DAA should be carefully evaluated to avoid the risk of side effects or loss of treatment efficacy.
Aim and objectives To investigate the patterns of contraindicated DDI with pan-genotypic DAA in real world practice.
Material and methods We conducted a retrospective cohort study by analysing the Chang Gung Research Database, a multi-institutional electronic medical records database which covers 1.3 million individuals (6% of the Taiwan population). We included CHC patients newly receiving pan-genotypic DAA (eg, glecaprevir/pibrentasvir (GLE/PIB) or sofosbuvir/velpatasvir (SOF/VEL)) from 1 August 2018 to 31 September 2019. We identified drugs with contraindicated DDI following the HEP Drug Interaction Checker and pharmaceutical package insert. We calculated the numbers and rates of exposure to contraindicated DDI 3 months prior to initiation of pan-genotypic DAA, and evaluated the changes under pan-genotypic DAA treatment.
Results We included 1311 and 239 CHC patients newly receiving GLE/PIB and SOF/VEL, respectively. Before pan-genotypic DAA treatment, 33 (2.5%) and 3 (1.3%) patients receiving GLE/PIB and SOF/VEL, respectively, received prescriptions involving contraindicated DDI. Among the prescriptions with contraindicated DDI with GLE/PIB, 25 (75.8%) included lipid lowering agents and 6 (18.2%) included anticonvulsants. Among those with contraindicated DDI with SOF/VEL, 2 (66.6%) were for anticonvulsants and 1 (33.3%) involved a nucleoside reverse transcriptase inhibitor. After initiation of pan-genotypic DAA, we found exposure to contraindicated DDI decreased to 14 patients (1.1%) for those receiving GLE/PIB treatment. No change in contraindicated DDI exposure was observed in patients receiving SOF/VEL treatment.
Conclusion and relevance The rate of exposure to contraindicated DDI generally decreased after initiation of pan-genotypic DAA, but some contraindicated drugs remained co-prescribed. Future studies are required to evaluate the outcomes in patients exposed to contraindicated DDI.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

5PSQ-198 VARIATIONS IN EFFECTIVENESS AND SAFETY OF GLECAPREVIR/PIBRENTASVIR AMONG HEPATITIS C PATIENTS WITH DIFFERENT GENOTYPES: A MULTI-INSTITUTIONAL COHORT STUDY IN TAIWAN

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Background and importance Pan-genotypic direct acting antiviral agents (ie, glecaprevir/pibrentasvir (GLE/PIB)), have been proven in clinical trials to be effective and safe in the treatment of chronic hepatitis C (CHC) infection. However, CHC genotypes may vary in different populations and limited evidence is available regarding the effects of GLE/PIB in patients with different genotypes.
Aim and objectives To compare the effectiveness and safety of GLE/PIB in CHC patients with different genotypes in Taiwan.
Material and methods We retrospectively identified a cohort of CHC patients newly initiating GLE/PIB between August 2018 and June 2019 from the Chang Gung Research Database, a multi-institutional electronic medical records database covering approximately 1.3 million individuals (6% of the Taiwan population). We classified patients by genotype who were followed up for 12 weeks from completion of GLE/PIB therapy. Sustained virological response at 12 weeks (SVR12) was observed as the primary outcome. The safety outcome included elevation of alanine aminotransferase (ALT) or total bilirubin by three times the upper limit of normal (ULN), which was taken as an indicator of liver related adverse

events. We calculated the rate of study outcomes among CHC patients with different genotypes.
Results We identified 1589 CHC patients newly initiating GLE/PIB. Mean age was 61.7 (SD 12.6) years and 53% were women. The major CHC genotype was type 2 (60.2%), followed by type 1b (16.5%) and mixed type (5.7%). We found the rate of SVR12 was relatively lower among patients with genotype type 6 (91.1%), type 2 (91.4%) and type 3 (92.2%) compared with genotype type 1 (100%), type 5 (100%), mixed type (96.7%) and unknown type (93.8%). Furthermore, 14.7% of patients were found to have ALT elevation (>3 times the ULN). Most of these were genotype type 2 (8.7%), followed by type 1b (1.8%) and type 3 (1.2%). No patient had total bilirubin levels over three times the ULN.
Conclusion and relevance The effectiveness and safety of GLE/PIB in Taiwan may vary in CHC patients with different genotypes. The findings could be strong grounds for future large scale prospective studies to confirm the association between CHC genotypes and treatment outcome with GLE/PIB.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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5PSQ-199 USE OF SODIUM GLUCOSE COTRANSPORTER 2 INHIBITORS AND RISK OF FRACTURE IN TYPE 2 DIABETES PATIENTS: A MULTI-INSTITUTIONAL COHORT STUDY IN TAIWAN

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Background and importance The Canagliflozin Cardiovascular Assessment Study (CANVAS) indicated that use of sodium glucose cotransporter 2 inhibitors (SGLT2i) may increase the risk of fracture compared with placebo. However, the association has remained uncertain in previous real world studies, and many factors (eg, severity of diabetes) were not considered in the analyses.
Aim and objectives To evaluate the risk of fracture associated with the use of SGLT2i in type 2 diabetes patients.
Material and methods We conducted a retrospective cohort study by analysing the electronic medical record (EMR) data from the Chang Gung Research Database (CGRD), covering 1.3 million people in Taiwan (6% of the population). We selected type 2 diabetes patients newly receiving SGLT2i from 2016 to 2018. Dipeptidyl peptidase 4 inhibitor (DPP4i) was considered the active comparator as no association has been found between DPP4i and fractures. Using the propensity score derived from the patient's age, sex, baseline body mass index (BMI), systolic blood pressure, HbA1c, renal function, comorbidities and co-medications, we matched SGLT2i new users 1:1 with DPP4i new users. The primary outcome was hospitalisation due to fracture at any site. We followed patients from initiation of SGLT2i or DPP4i to fracture hospitalisation, death, last clinical visit or 31 December 2019. We used the Cox proportional hazard to estimate the fracture risk associated with SGLT2i and DPP4i use.
Results We identified 10 736 patients for each group receiving SGLT2i or DPP4i. Mean age was 59.3 (SD 12.5) years and 39.6% were women. Mean BMI, HbA1c and eGFR were 28.0 (SD 4.7) kg/m^2, 8.8 (SD 1.9)% and 94.7 (SD 31.8) mL/min/1.73 m^2, respectively. The incidence rates of fracture were 3.1 and 4.2 per 1000 person years for SGLT2i and DPP4i users, respectively. The risk of fracture was similar for SGLT2i users (HR 0.79, 95% CI 0.51 to 1.23) and DPP4i users.
Conclusion and relevance Different from the findings of CANVAS, our analysis of real world EMR data in Taiwan did not reveal any positive association between SGLT2i and fracture risk.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest No conflict of interest

5PSQ-200 COMPARATIVE CARDIOVASCULAR EVENTS ASSOCIATED WITH DENOSUMAB VERSUS ZOLEDRONATE IN THE ELDERLY: A MULTI-INSTITUTIONAL COHORT STUDY IN TAIWAN

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Background and importance Osteoporosis and atherosclerosis share similar risk factors and pathological mechanisms in developing cardiovascular events. Two long acting injections, denosumab and zoledronate, are commonly used for osteoporosis treatment due to better persistence in therapy, but comparisons of long term cardiovascular events between these two drugs remain unclear, especially in the elderly Asian population.
Aim and objectives To compare the cardiovascular event risk between denosumab and zoledronate in patients with osteoporosis.
Material and methods We conducted a retrospective cohort study analysing the largest multi-institutional electronic medical records database in Taiwan, covering 1.3 million individuals (6% of the Taiwan population). We included osteoporotic patients aged over 65 years without cardiovascular events at baseline, newly receiving denosumab or zoledronate during 2015–2016, and used 1:1 propensity score matching to ensure balanced characteristics between the two groups. The primary study outcome was the composite of cardiovascular events, including cardiovascular death, myocardial infarction, ischaemic stroke and heart failure. We followed these patients until the occurrence of cardiovascular events, last clinical visit or the end of the database (31 December 2019) and performed a Cox proportion hazard model to compare the cardiovascular event risks between denosumab and zoledronate.
Results We included 3908 denosumab and 803 zoledronate new users with a mean age of 75.7 (SD 9.4) years, of whom 19.8% were men. After matching, baseline characteristics, including sex, age, comorbidities and concomitant medications, were balanced between the denosumab and zoledronate new users. After a median follow-up of 3.8 years, we identified 59 and 61 cardiovascular events in patients with denosumab and zoledronate, respectively. The incidence rate of cardiovascular