Abstract 3 for Rheumatology Conference (Deadline: 28 October 2016, word limit: 450)

Title: Comparative risk of acute myocardial infarction amongst users of different anti-osteoporosis drugs in Catalonia, Spain: a propensity-matched cohort study using data from the SIDIAP database.

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Background: Recent concerns have been raised on a possible increase in cardiovascular risk associated with strontium ranelate use.

Objectives: We aimed to compare the association between use of different AODs and the risk of acute myocardial infarction (AMI) amongst real-world users of AODs in primary care settings.

Methods: A cohort study was conducted including all users of anti-osteoporosis medications registered in the Sidiap dataset. The SIDIAP database contain pseudonymised primary care records for a representative >6 million Catalan healthcare system users respectively.

Study exposure was use (as defined by GP prescriptions) of alendronate (reference group) compared to 1.other oral bisphosphonates, 2.strontium ranelate, and 3. SERMs.

Outcomes: Newly recorded AMI while on treatment with any AOD.

Statistics: Multiple imputation was used to handle missing data on co-variables, and propensity score matching (PSM) was performed to minimise confounding. A proportional sub-distribution hazards regression model was used to estimate the relative risk of AMI (Subhazard Ratio, SHR) with a competing risk of death. Confounders for PSM included the available risk factors for AMI: age, gender, body mass index, smoking, drinking, Charlson co-morbidity index, chronic kidney failure (based on serum creatinine/eGFR measures), LDL cholesterol, recent use of systemic glucocorticoids, pro-thrombotic medications (anti-coagulants, hormone replacement therapy), socio-economic status, country of birth, and history of ischaemic heart disease, cerebro-vascular disease, chronic kidney failure, nephrotic syndrome, type 2 diabetes, and recent hip or non- hip fractures.

Results: Data for 126,891 patients were included, with a median (inter-quartile range) follow-up of 5.7 (3.67) years. No significant association was found between the included AOD users as compared to alendronate (Table 1).

Discussion: We found no evidence of a differential risk of AMI amongst users of different AODs compared. Future work will include the replication of these analyses using a similar UK dataset.

Table 1. AMI incidence rate in person years (IR) and relative risk (SHR) amongst different drug users compared to propensity-matched alendronate users. n = number of matched patients in the analysis.

	SIDIAP		
Drug	*n*	IR (100py)	SHR (95% CI)
Alendronate	63827	0.16	ref
Other oral bisphosphonates	39317	0.16	1.05 (0.92, 1.21)
Alendronate	36258	0.13	ref
SERMS	10619	0.12	1.04 (0.81 1.34)
Alendronate	51857	0.15	ref
Strontium ranelate	13116	0.14	0.97 (0.76, 1.19)

Disclosures/ Conflict of Interest

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ALL AUTHORS TO FILL IN PLEASE

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Ethics Approval

ISAC approval was obtained for access to CPRD data. Ethics approval from the local board (Comite d'Etica en Investigacio Clinica Idiap Jordi Gol, Barcelona, Spain) was obtained for the analysis of SIDIAP data.

References (Supplementary information, not to be submitted with the abstract)

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