

TABLE 1 Differences between hip fracture cases and controls

	Cases N = 4818	Controls N = 19 235	P value
Women	3632 (75%)	14 520 (75%)	0.881
Age			0.803
<65	30 (<1%)	112 (<1%)	
65-74	312 (6%)	1190 (6%)	
75-84	2209 (46%)	8936 (46%)	
≥85	2267 (47%)	8997 (47%)	
Socioeconomic position			0.033
High	1617 (34%)	6676 (35%)	
Medium	2799 (58%)	11 175 (58%)	
Low	341 (7%)	1156 (6%)	
Unknown	31 (1%)	228 (1%)	
≥90 hospital days	1683 (35%)	5527 (29%)	<0.0001
Comorbidities			
Previous			
Fracture	1662 (35%)	3851 (20%)	<0.0001
Stroke	590 (12%)	2078 (11%)	0.004
Cancer	261 (5%)	877 (5%)	0.012
Depression or bipolar disorder	141 (3%)	659 (3%)	0.084
Schizophrenia	60 (1%)	236 (1%)	0.918
Substance abuse	122 (3%)	412 (2%)	0.100
Cardiovascular disease	2441 (51%)	10 164 (53%)	0.007
Diabetes	627 (13%)	2570 (13%)	0.525
Asthma/COPD	424 (9%)	1626 (8%)	0.441
Glaucoma	514 (11%)	2108 (11%)	0.562
Rheumatoid arthritis	242 (5%)	874 (5%)	0.158
Epilepsy	126 (3%)	380 (2%)	0.006
Drugs			
AChEs	2646 (55%)	11 505 (60%)	<0.0001
Memantine	1390 (29%)	5600 (29%)	0.719
Oral corticosteroids	1081 (22%)	4349 (23%)	0.797
Bisphosphonate	870 (18%)	3438 (18%)	0.766
Antipsychotics	1165 (24%)	3434 (18%)	<0.0001
Antidepressants	1407 (29%)	4538 (24%)	<0.0001
BZDRs	1260 (26%)	4236 (22%)	<0.0001
Opioids	422 (9%)	1092 (6%)	<0.0001
Antithrombotics	989 (21%)	4161 (22%)	0.094
H2-blockers	955 (20%)	3982 (21%)	0.176

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TABLE 2 Hip fracture risk estimates for of PPI use compared to non-use

PPI use	Cases N = 4818	Controls N = 19 235	OR crude (95% CI), P value	OR adjusted (95% CI), ^a P value
Current use	973 (20%)	3274 (17%)	1.24 (1.15-1.35), <0.0001	1.12 (1.03-1.22), 0.010
Past use	104 (2%)	335 (2%)	1.30 (1.04-1.63), 0.022	1.19 (0.95-1.50), 0.131
Duration of current use				
<1 y	543 (11%)	1,673 (9%)	1.36 (1.22-1.51), <0.0001	1.23 (1.10-1.37), 0.0002
Long-term use ^b				
1-2 y	189 (4%)	717 (4%)	1.11 (0.94-1.30), 0.233	0.97 (0.81-1.15), 0.696
2-3 y	115 (2%)	353 (2%)	1.36 (1.09-1.68), 0.006	1.20 (0.96-1.49), 0.115
3-4 y	56 (1%)	227 (1%)	1.04 (0.77-1.40), 0.821	0.96 (0.71-1.31), 0.815
>4 y	70 (1%)	304 (2%)	0.97 (0.73-1.25), 0.791	0.90 (0.68-1.17), 0.426
Ever user	2321 (48%)	9066 (47%)	1.19 (1.10-1.30), <0.0001	1.08 (0.99-1.18), 0.094
Cumulative use				
<1 y	1358 (28%)	5377 (28%)	1.03 (0.96-1.11), 0.415	0.98 (0.91-1.06), 0.631
1-2 y	330 (7%)	1228 (6%)	1.10 (0.97-1.25), 0.156	0.96 (0.84-1.11), 0.601
2-3 y	218 (5%)	756 (4%)	1.17 (1.00-1.37), 0.047	1.03 (0.87-1.22), 0.716
3-4 y	136 (3%)	532 (3%)	1.05 (0.86-1.27), 0.653	0.90 (0.74-1.11), 0.327
4-5 y	91 (2%)	401 (2%)	0.93 (0.74-1.17), 0.528	0.82 (0.65-1.05), 0.116
5-6 y	52 (1%)	245 (1%)	0.87 (0.64-1.18), 0.367	0.79 (0.58-1.08), 0.132
6-7 y	48 (1%)	171 (1%)	1.15 (0.83-1.59), 0.393	0.99 (0.71-1.39), 0.970
7-8 y	34 (<1%)	118 (<1%)	1.18 (0.80-1.74), 0.399	1.08 (0.73-1.62), 0.695
8-9 y	27 (<1%)	104 (<1%)	1.07 (0.70-1.63), 0.770	0.87 (0.56-1.36), 0.539
9-10 y	25 (<1%)	118 (<1%)	0.87 (0.56-1.34), 0.513	0.73 (0.47-1.15), 0.174

PPI, proton pump inhibitors; OR, odds ratio; CI, confidence interval.

^aAdjusted by age, sex, socioeconomic position; ≥ 90 hospital days during the follow-up; cardiovascular diseases, diabetes, asthma/chronic obstructive pulmonary disease, glaucoma, rheumatoid arthritis, epilepsy; previous fracture, stroke, cancer, depression or bipolar syndrome, schizophrenia, substance abuse; use of acetylcholine esterase inhibitors, memantine, oral corticosteroids, bisphosphonates, antipsychotics, antidepressants, benzodiazepines and related drugs, opioids, antithrombotics, H2-blockers.

短期の処方では若干の増加はありますが長期になりますとその危険率は差がありません

TABLE 3 PPI drug substances and hip fracture risk estimates at the index date

	Cases N = 4818	Controls N = 19 235	OR adjusted (95% CI), ^a P value
Pantoprazole	407 (8%)	1384 (7%)	1.12 (0.98-1.25), 0.075
Esomeprazole	174 (4%)	662 (3%)	0.94 (0.79-1.24), 0.495
Omeprazole	170 (4%)	521 (3%)	1.20 (1.00-1.44), 0.053
Lansoprazole	123 (3%)	451 (2%)	1.07 (0.87-1.32), 0.528
Rabeprazole	5 (0%)	9 (0%)	2.09 (0.68-6.40), 0.199

PPI, proton pump inhibitors; OR, odds ratio; CI, confidence interval.

^aAdjusted by age, sex, socioeconomic position; ≥ 90 hospital days during the follow-up; cardiovascular diseases, diabetes, asthma/chronic obstructive pulmonary disease, glaucoma, rheumatoid arthritis, epilepsy; previous fracture, stroke, cancer, depression or bipolar syndrome, schizophrenia, substance abuse; use of acetylcholine esterase inhibitors, memantine, oral corticosteroids, bisphosphonates, antipsychotics, antidepressants, benzodiazepines and related drugs, opioids, antithrombotics, H2-blockers.

PPIの種類に関しても違いは無いようです。