

Supplementary Table 1. Age and Gender Distribution of Study Population (*n*, %)

	General Population (<i>n</i> = 801,926)		Osteoarthritis Patients (<i>n</i> = 93,855)		Subjects with Health Check-up (<i>n</i> = 233,879)	
Age						
20-24	69,110	(8.62)	1,102	(1.17)	5,674	(2.43)
25-29	62,812	(7.83)	1,227	(1.31)	15,570	(6.66)
30-34	79,575	(9.92)	1,844	(1.96)	22,178	(9.48)
35-39	76,378	(9.52)	2,306	(2.46)	18,895	(8.08)
40-44	90,825	(11.33)	3,929	(4.19)	34,474	(14.74)
45-49	85,843	(10.70)	6,199	(6.60)	26,925	(11.51)
50-54	87,910	(10.96)	10,732	(11.43)	32,852	(14.05)
55-59	71,573	(8.92)	12,420	(13.23)	23,603	(10.09)
60-64	49,544	(6.18)	11,524	(12.28)	19,934	(8.52)
65-69	39,792	(4.96)	11,995	(12.78)	12,301	(5.26)
70-74	36,883	(4.60)	12,879	(13.72)	12,739	(5.45)
75-79	26,193	(3.27)	9,599	(10.23)	5,223	(2.23)
80-84	15,016	(1.87)	5,294	(5.64)	2,739	(1.17)
≥ 85	10,508	(1.31)	2,805	(2.99)	772	(0.33)
Sex						
Male	396,338	(49.42)	30,105	(32.08)	126,107	(53.92)
Female	405,624	(50.58)	63,750	(67.92)	107,772	(46.08)

Supplementary Table 2. Age-Group Specific Prevalence of Gastrointestinal Bleeding Risk Factors in Osteoarthritis Patients (%)

	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	≥85yr
Comorbid Conditions														
Peptic Ulcer	6.62	8.64	9.27	10.88	13.82	14.60	18.20	18.54	20.21	21.43	23.45	21.70	20.10	16.33
Diabetes	0.45	0.73	1.57	3.38	5.17	7.89	10.98	14.74	20.10	24.01	27.06	27.42	25.71	18.29
Liver Disease	3.99	4.48	7.32	8.72	8.02	9.10	10.45	10.72	10.92	10.55	9.41	7.84	6.78	4.88
Chronic Renal Failure	0.00	0.08	0.22	0.22	0.33	0.26	0.45	0.42	0.69	1.00	1.37	1.25	1.95	1.60
Gastroesophageal Reflux Disease	12.98	14.34	16.38	17.74	21.71	22.58	26.61	27.97	29.28	30.28	30.76	27.32	24.16	18.18
Concomitant Drugs*														
Aspirin	0.09	0.08	0.11	0.82	1.60	3.68	6.63	11.55	17.36	20.99	25.57	26.26	27.14	23.28
Clopidogrel	0.00	0.00	0.00	0.09	0.33	0.76	1.13	2.48	3.87	5.49	7.42	9.22	9.44	8.20
Cilostazol	0.00	0.00	0.05	0.09	0.33	0.37	0.54	1.12	1.79	2.16	3.03	3.34	3.17	2.46
NSAIDs	5.99	6.52	7.59	11.14	15.47	18.18	24.13	27.73	31.35	33.06	34.87	35.83	36.46	32.87
Steroid	1.27	0.82	1.46	1.99	2.04	2.63	3.07	3.48	4.29	4.65	5.26	5.14	5.04	3.99
Anticoagulants†	0.09	0.00	0.05	0.00	0.13	0.11	0.12	0.20	0.34	0.39	0.55	0.81	0.68	0.68
SSRI	0.09	0.24	0.16	0.30	0.53	0.42	0.73	0.63	0.76	1.18	1.50	1.73	1.72	1.43
No. of Risk Factors														
≥ 1	24.68	28.20	32.48	38.33	46.75	51.12	61.52	67.51	73.79	77.17	80.88	80.77	80.19	72.48
≥ 2	6.17	6.44	9.06	12.97	16.95	21.52	28.66	34.63	41.73	47.09	51.56	51.10	49.06	39.82
≥ 3	0.64	1.14	1.95	3.43	4.61	6.50	9.76	12.79	18.05	21.46	25.51	24.29	22.82	14.72

No. of Risk Factors

(Excluding Concomitant NSAIDs Use)

≥ 1	21.42	24.45	28.85	33.43	39.78	44.14	52.87	58.48	65.07	69.02	72.94	72.61	70.91	61.35
≥ 2	3.90	4.56	6.62	9.24	11.61	15.03	19.92	24.44	30.85	35.94	40.54	38.83	36.78	27.20
≥ 3	0.27	0.41	1.03	1.34	2.24	2.76	5.12	7.03	10.46	13.00	16.27	15.20	13.51	8.34

No. of Risk Factors

(After H. pylori Prevalence Imputation)

≥ 1	45.46	47.43	61.88	63.92	74.85	76.69	84.82	87.54	90.25	91.32	92.20	92.09	91.97	88.77
≥ 2	11.62	12.39	19.31	23.33	33.14	36.86	48.61	54.65	61.99	65.57	69.00	68.54	67.30	59.04
≥ 3	1.91	2.44	5.31	7.72	10.97	14.39	21.50	26.17	32.75	37.27	40.73	39.97	38.42	29.95

NSAIDs, non-steroidal anti-inflammatory drugs; SSRI, selective serotonin reuptake inhibitor

* Subjects who were prescribed 60 days or more in 2013

† Warfarin, rivaroxaban, dabigatran, and apixaban were included

Supplementary Table 3. Prevalence of Gastrointestinal bleeding Risk Factors in Subjects Who Performed Health Check-up (%)

	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	≥85yr
Comorbid Conditions														
Peptic Ulcer	4.99	5.13	5.15	6.29	10.74	11.86	15.02	16.59	18.24	19.32	21.98	21.64	19.02	17.23
Diabetes	0.32	0.40	0.72	1.79	3.47	5.62	8.96	12.99	18.35	21.41	24.59	25.46	23.48	18.26
Chronic Liver Disease	2.33	2.94	3.88	4.75	5.70	6.93	8.70	9.58	10.12	9.29	8.48	7.29	6.06	5.44
Chronic Renal Failure	0.00	0.03	0.05	0.05	0.16	0.18	0.27	0.34	0.64	0.63	1.01	1.78	1.50	1.17
Gastroesophageal Reflux Disease	8.58	9.44	9.90	11.28	19.82	20.21	24.78	26.52	29.97	30.58	31.93	31.15	28.00	20.21
Concomitant Drugs*														
Aspirin	0.00	0.09	0.11	0.43	1.22	2.66	6.00	10.67	16.08	20.29	25.10	27.32	25.99	23.32
Clopidogrel	0.00	0.00	0.05	0.06	0.23	0.49	1.14	1.90	3.55	5.22	6.59	8.00	8.00	7.64
Cilostazol	0.00	0.00	0.00	0.03	0.12	0.22	0.48	0.83	1.37	1.81	2.39	3.01	2.59	2.85
NSAIDs	0.46	0.64	1.04	1.56	2.53	3.83	7.01	9.69	12.85	15.70	19.45	21.92	22.86	17.36
Steroid	0.25	0.28	0.37	0.60	0.73	0.88	1.25	1.73	2.09	2.97	3.34	3.96	3.65	2.72
Anticoagulants [†]	0.02	0.01	0.02	0.04	0.04	0.09	0.10	0.18	0.29	0.44	0.55	0.96	0.73	0.39
SSRI	0.07	0.06	0.08	0.11	0.23	0.25	0.34	0.38	0.54	0.76	1.01	1.44	1.61	2.07
Personal Habits														
Current Smoker	27.00	29.17	36.50	39.10	28.69	26.21	21.70	19.32	15.27	12.71	10.40	9.02	7.05	5.44
Problematic Drinker [‡]	26.98	24.66	25.42	24.03	19.72	18.06	15.04	11.92	8.91	18.13	12.43	8.48	6.54	4.66
No. of Risk Factors														
≥ 1	51.52	51.80	57.07	60.66	58.74	60.25	64.04	68.09	72.83	77.76	80.41	80.91	78.93	69.95
≥ 2	16.94	17.98	22.04	23.45	25.07	26.18	31.07	34.62	40.20	47.45	50.43	51.31	47.10	38.21

≥ 3	2.22	2.62	3.58	4.92	7.35	8.25	11.50	13.88	17.20	22.58	24.81	25.50	21.10	15.54
No. of Risk Factors (After H. pylori Prevalence Imputation)														
≥ 1	64.49	64.57	75.42	77.18	80.44	81.06	86.08	87.68	89.56	91.55	92.17	92.38	91.93	88.34
≥ 2	26.42	27.41	36.57	38.97	42.96	43.96	51.13	55.08	60.51	65.73	68.40	68.31	65.57	57.12
≥ 3	5.75	6.56	11.31	12.74	16.48	17.83	23.34	26.44	31.47	38.29	39.63	40.03	36.66	29.66

NSAIDs, non-steroidal anti-inflammatory drugs; SSRI, selective serotonin reuptake inhibitor; H. pylori, Helicobacter pylori

* Subjects who were prescribed 60 days or more in 2013

† Warfarin, rivaroxaban, dabigatran, and apixaban were included

‡ Men, > 4 standard drinks in a day or > 14 standard drinks in a week; Women, > 3 standard drinks in a day or > 7 standard drinks in a week; Aged 65 or more, > 1 standard drinks in a day or > 7 standard drinks in a week