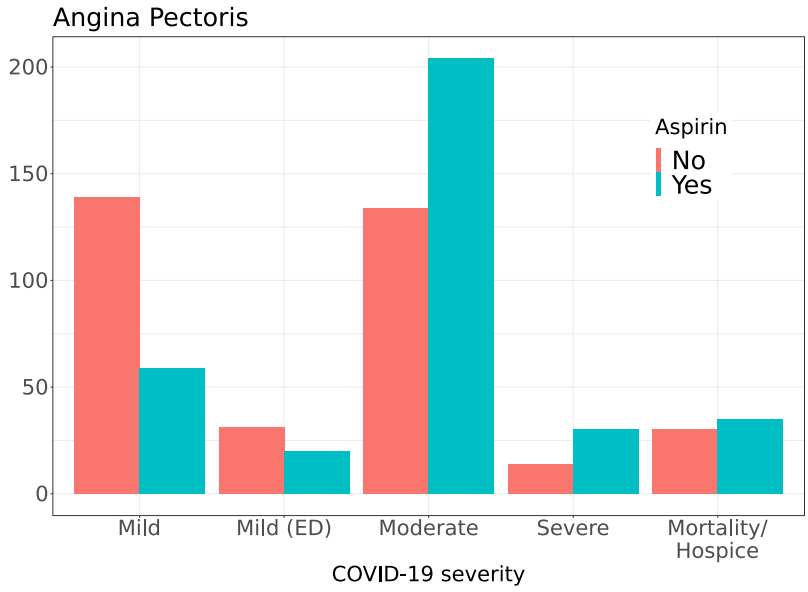
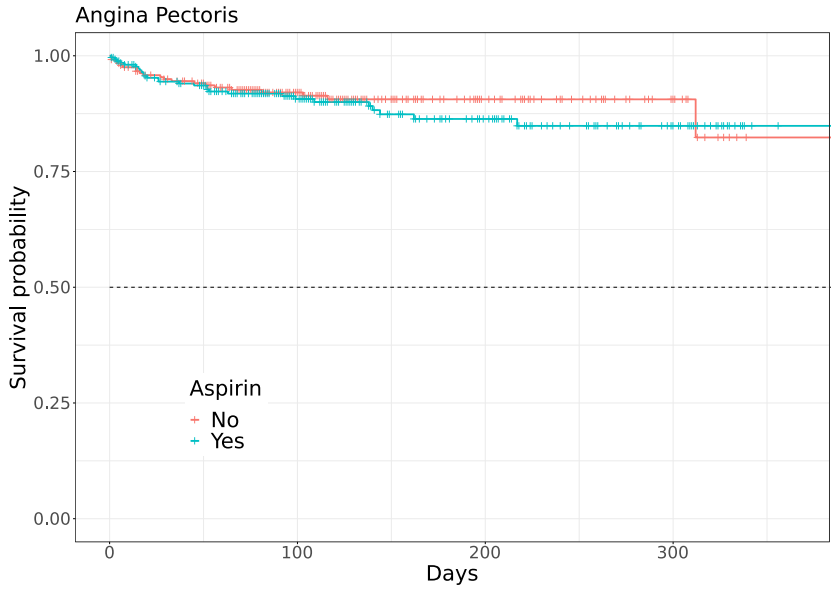
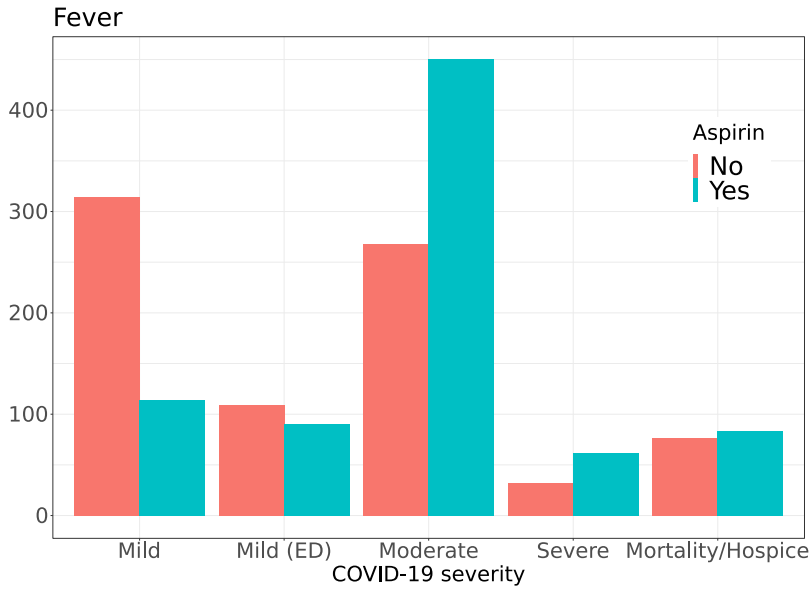


(a)

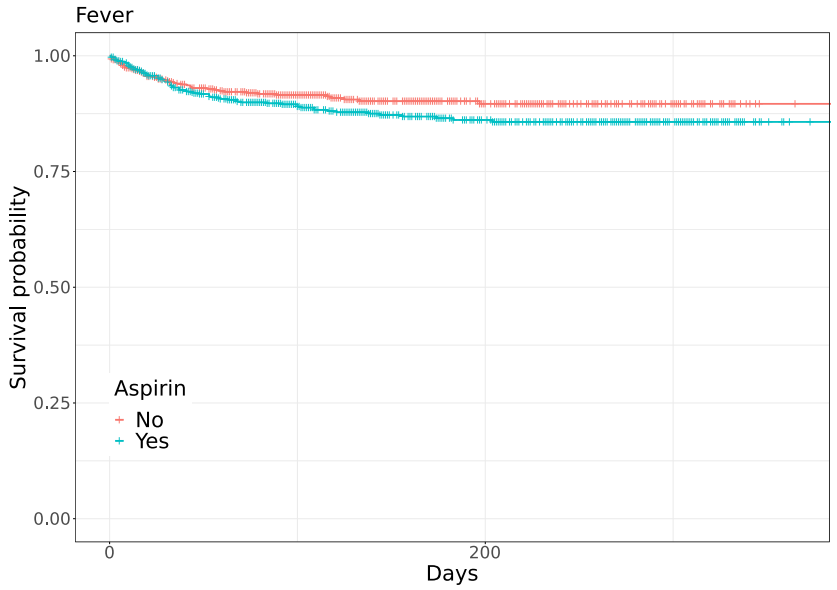


(b)

Figure **S1**: **Aspirin: Angina pectoris**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S5**. **(b)**. Kaplan Meier Curve. See Table **S26** for corresponding Cox multiple regression analysis.

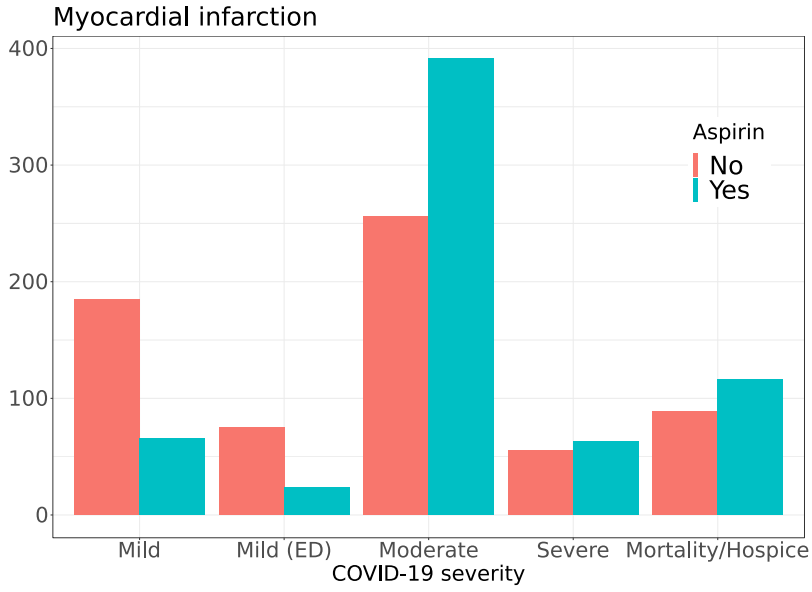


(a)

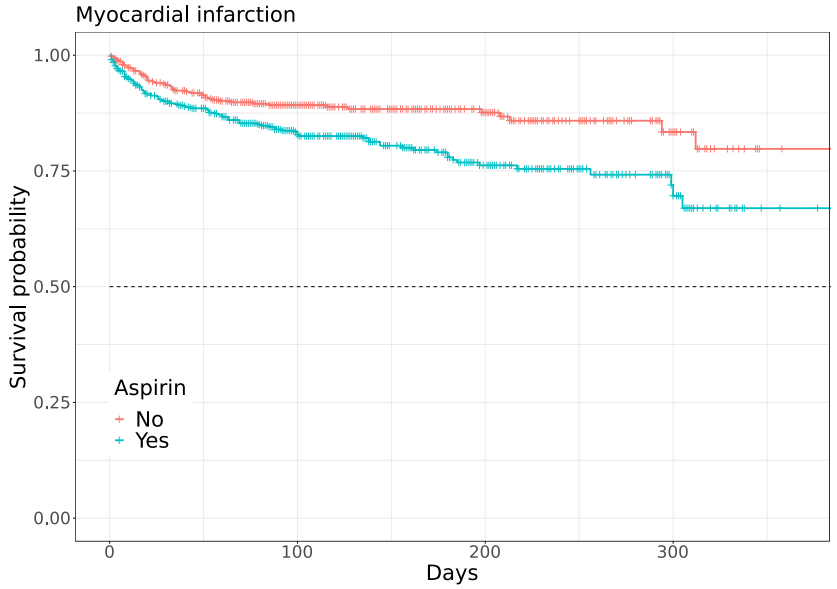


(b)

Figure **S2**: **Aspirin: Fever**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S6**. **(b)**. Kaplan Meier Curve. See Table **S27** for corresponding Cox multiple regression analysis.

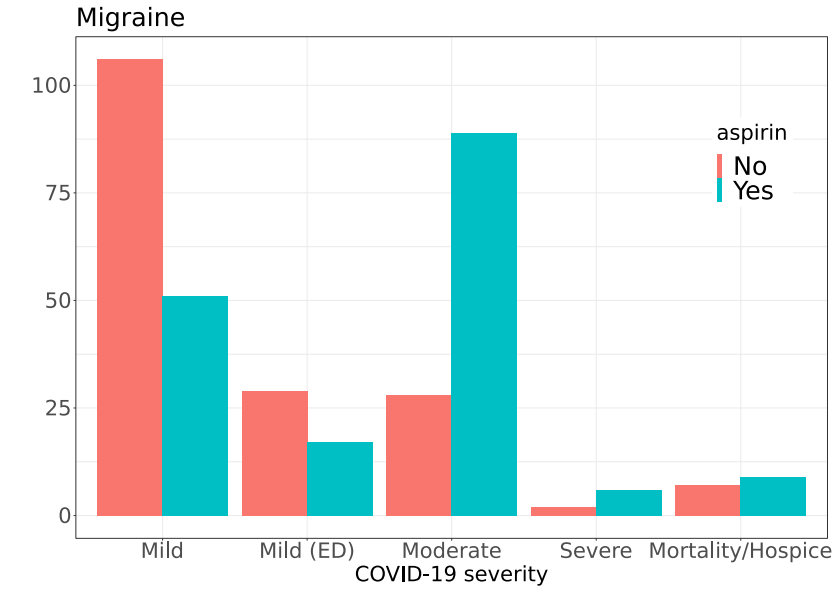


(a)

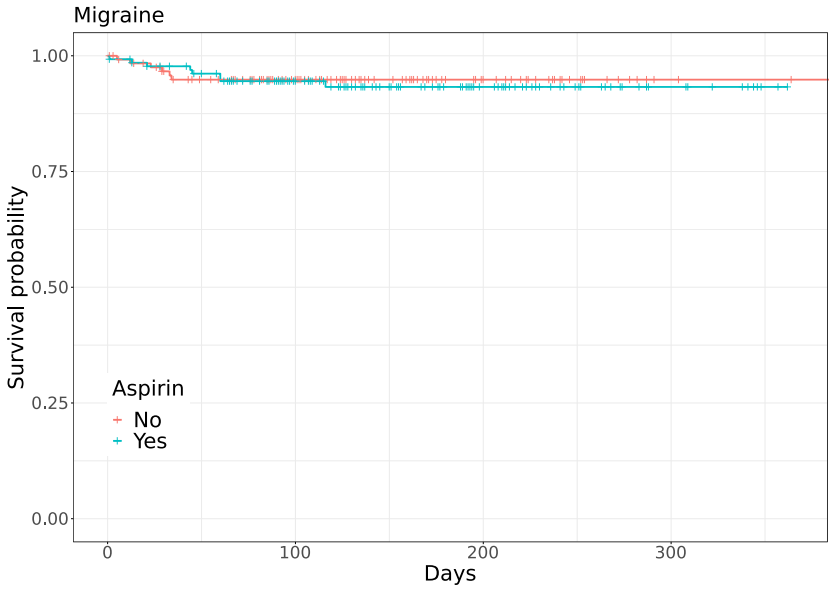


(b)

Figure **S3**: **Aspirin: Myocardial infarction**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S8**. **(b)**. Kaplan Meier Curve. See Table **S29** for corresponding Cox multiple regression analysis.

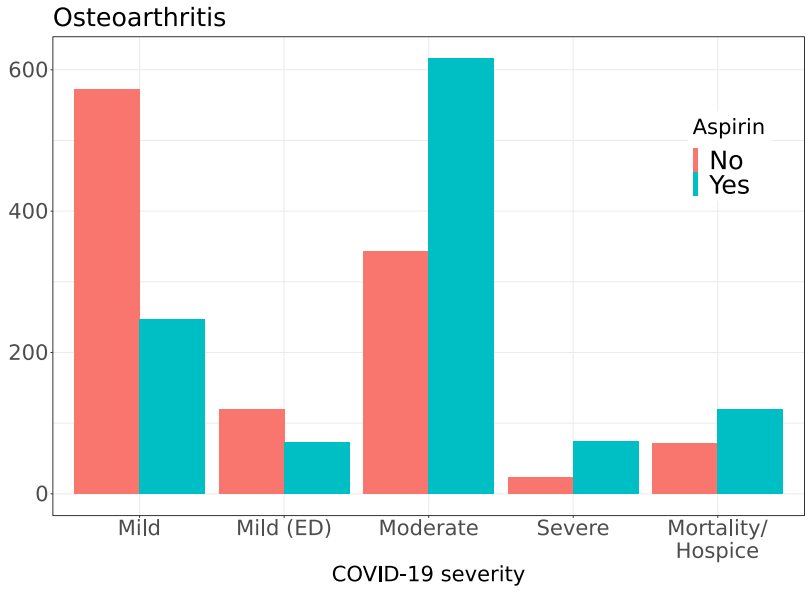


(a)

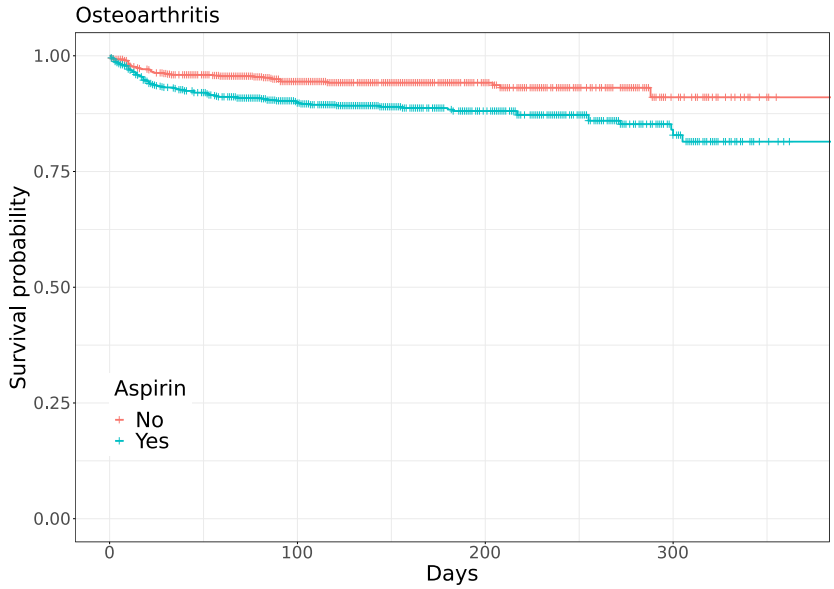


(b)

Figure **S4**: **Aspirin: Migraine**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S7**. **(b)**. Kaplan Meier Curve. See Table **S28** for corresponding Cox multiple regression analysis.

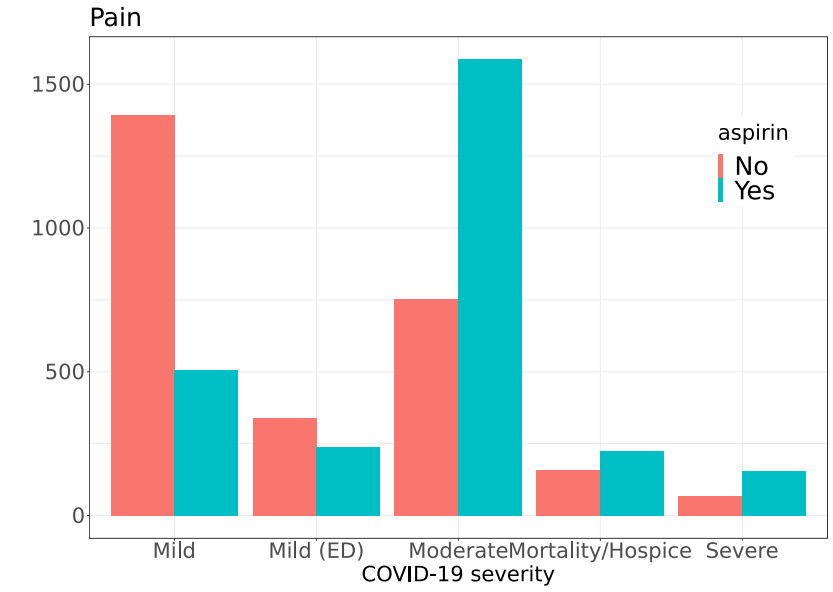


(a)

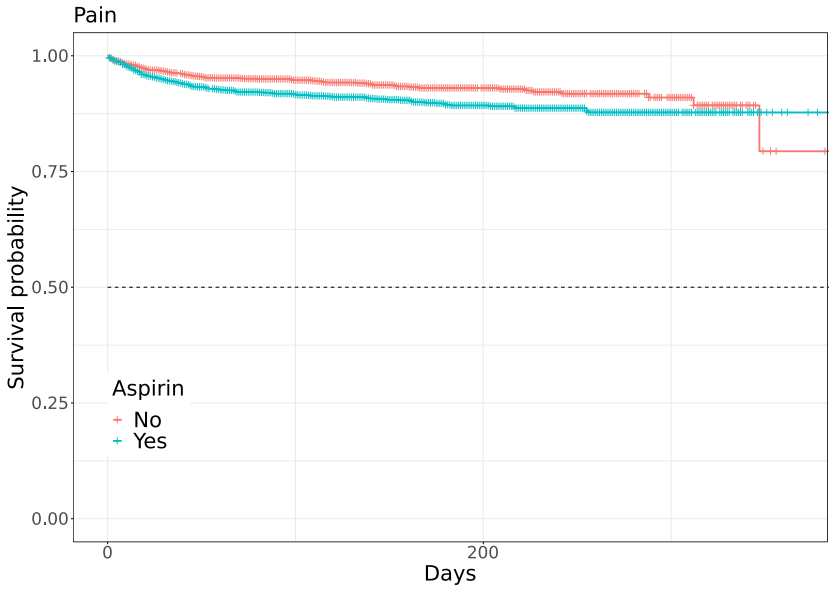


(b)

Figure **S5**: **Aspirin: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S9**. **(b)**. Kaplan Meier Curve. See Table **S30** for corresponding Cox multiple regression analysis.

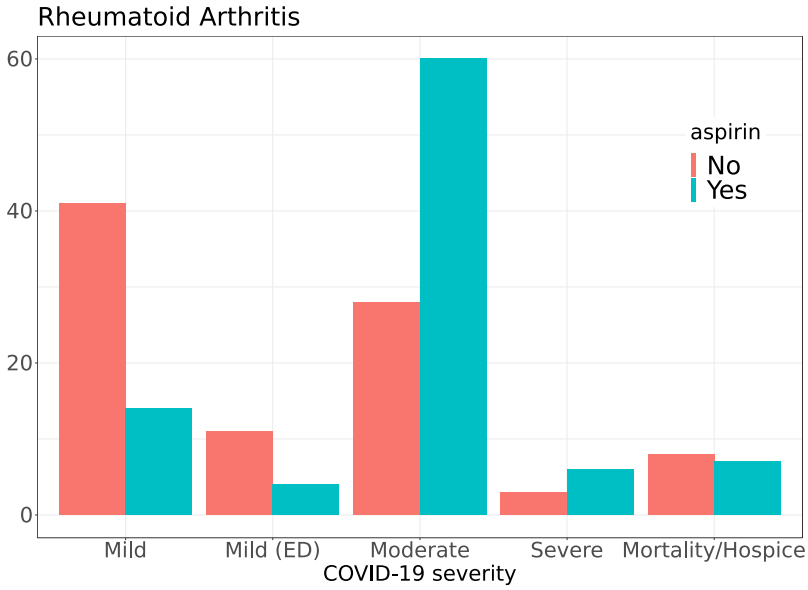


(a)

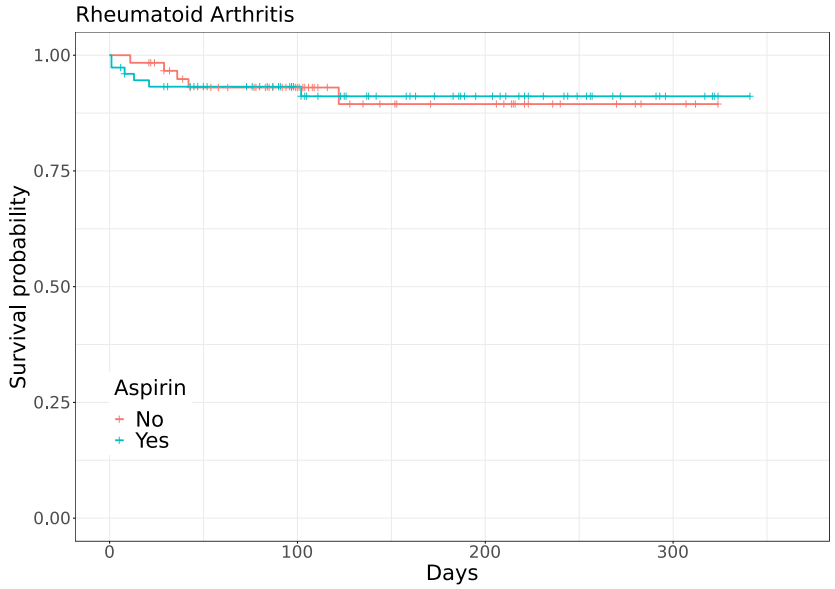


(b)

Figure **S6**: **Aspirin: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S10**. **(b)**. Kaplan Meier Curve. See Table **S31** for corresponding Cox multiple regression analysis.

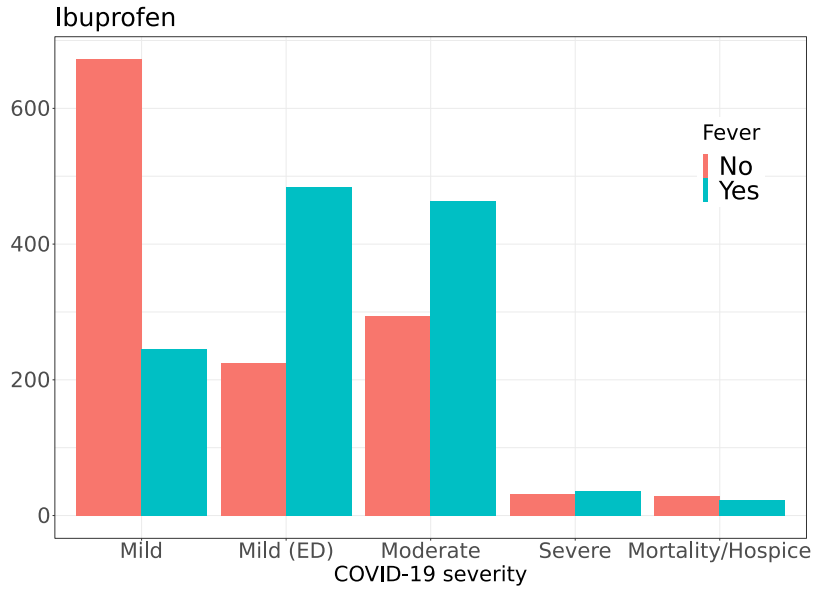


(a)

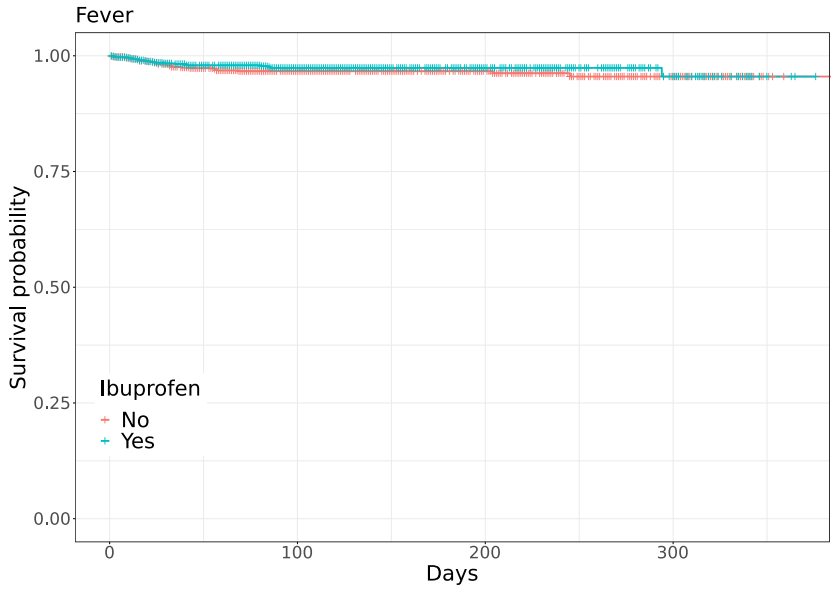


(b)

Figure **S7**: **Aspirin: Rheumatoid arthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S11**. **(b)**. Kaplan Meier Curve. See Table **S32** for corresponding Cox multiple regression analysis.

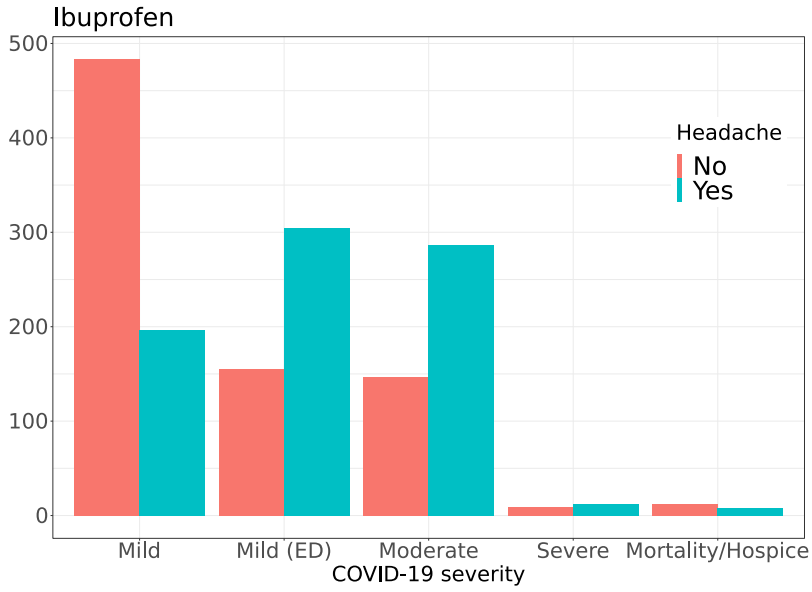


(a)

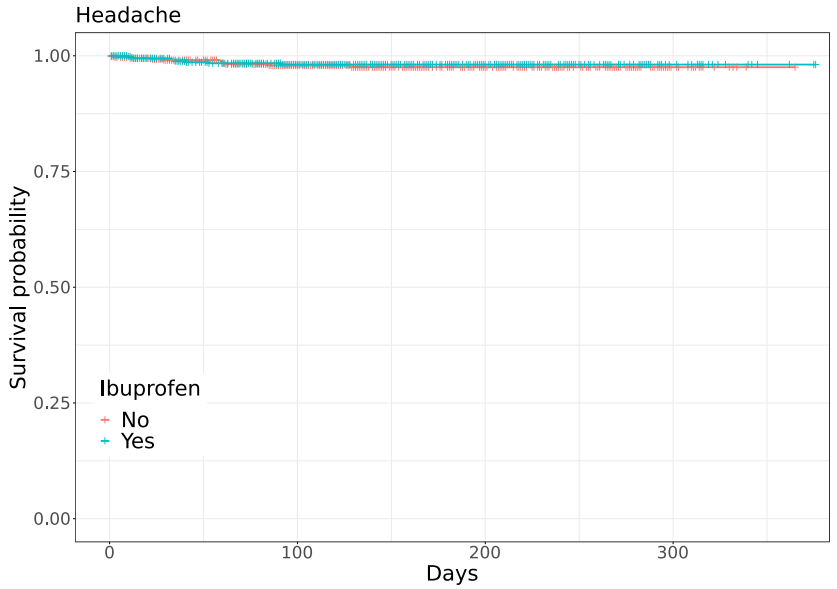


(b)

Figure **S8**: **Ibuprofen: Fever**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S12**. **(b)**. Kaplan Meier Curve. See Table **S33** for corresponding Cox multiple regression analysis.

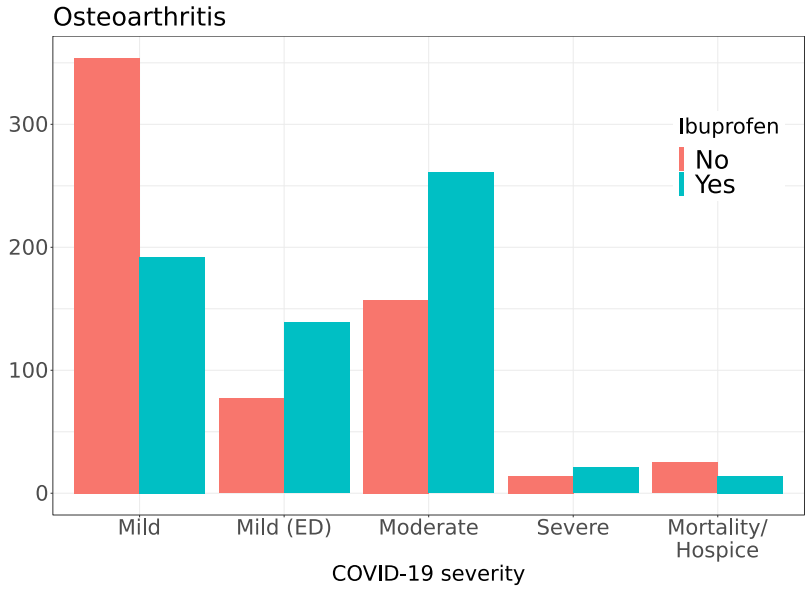


(a)

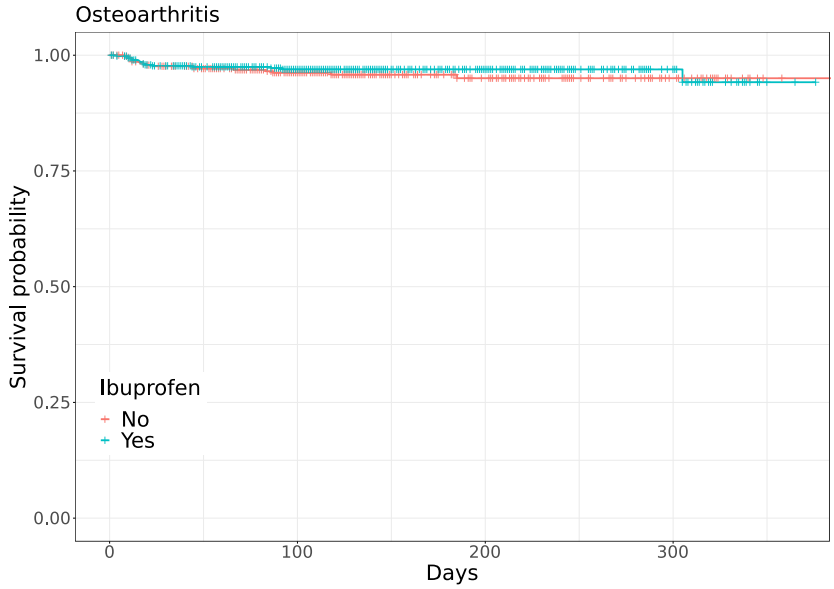


(b)

Figure **S9**: **Ibuprofen: Headache**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S13**. **(b)**. Kaplan Meier Curve. See Table **S34** for corresponding Cox multiple regression analysis.

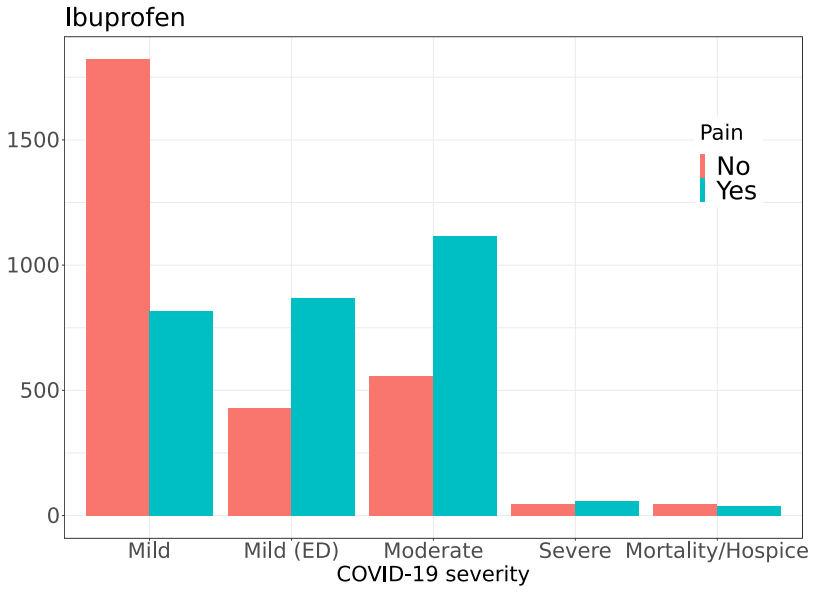


(a)

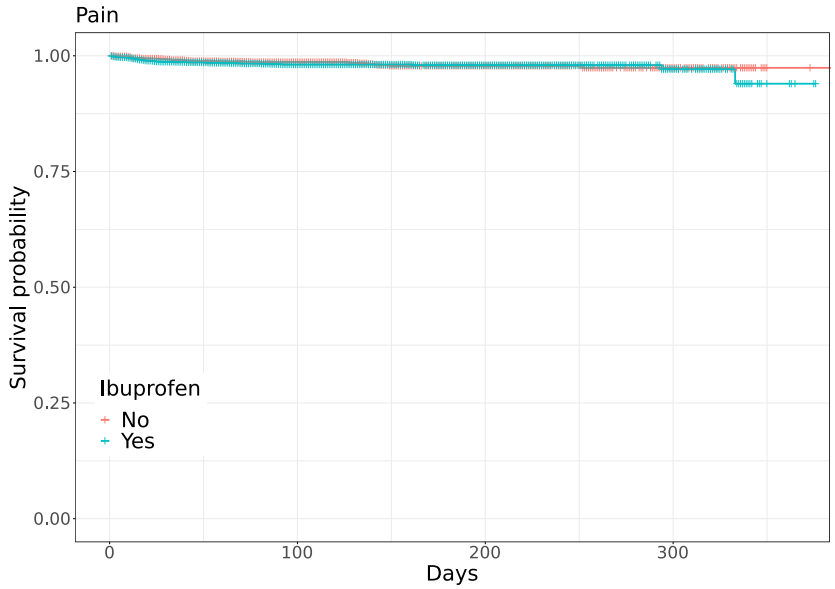


(b)

Figure **S10**: **Ibuprofen: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S14**. **(b)**. Kaplan Meier Curve. See Table **S35** for corresponding Cox multiple regression analysis.

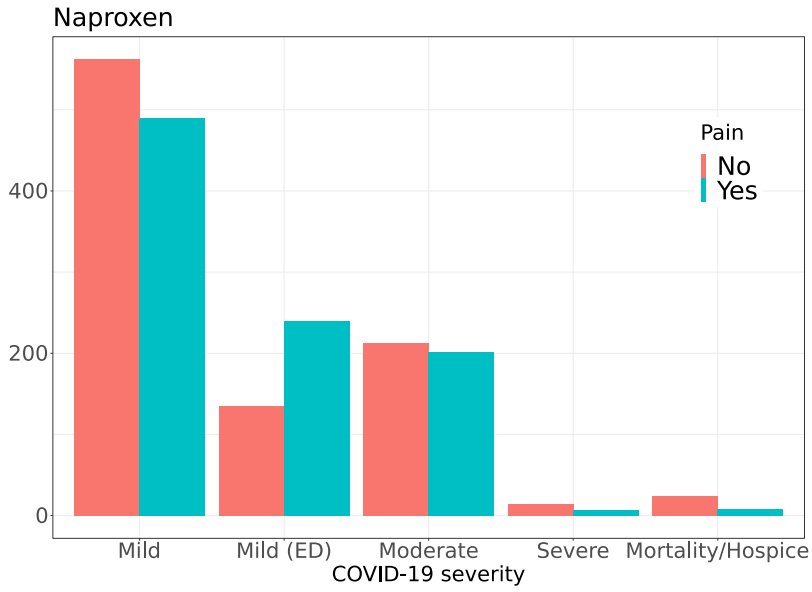


(a)

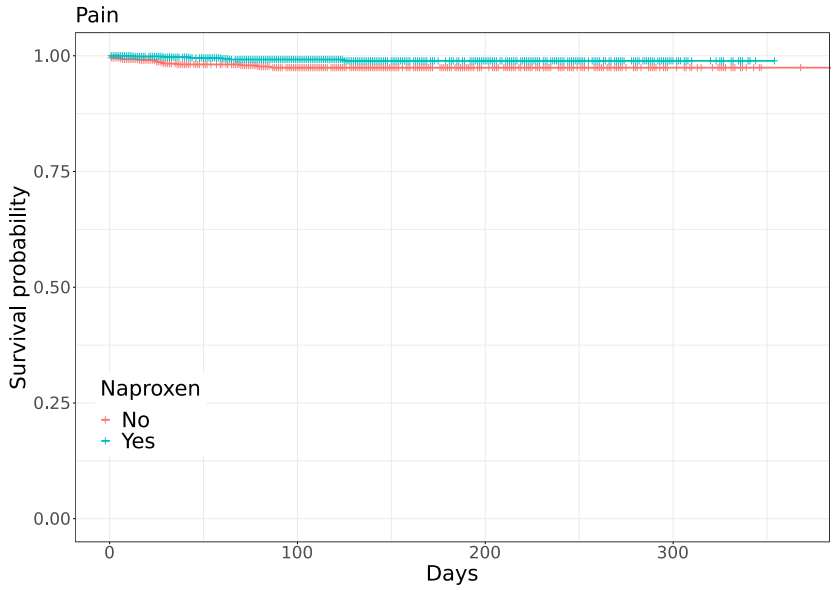


(b)

Figure **S11**: **Ibuprofen: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S15**. **(b)**. Kaplan Meier Curve. See Table **S36** for corresponding Cox multiple regression analysis.

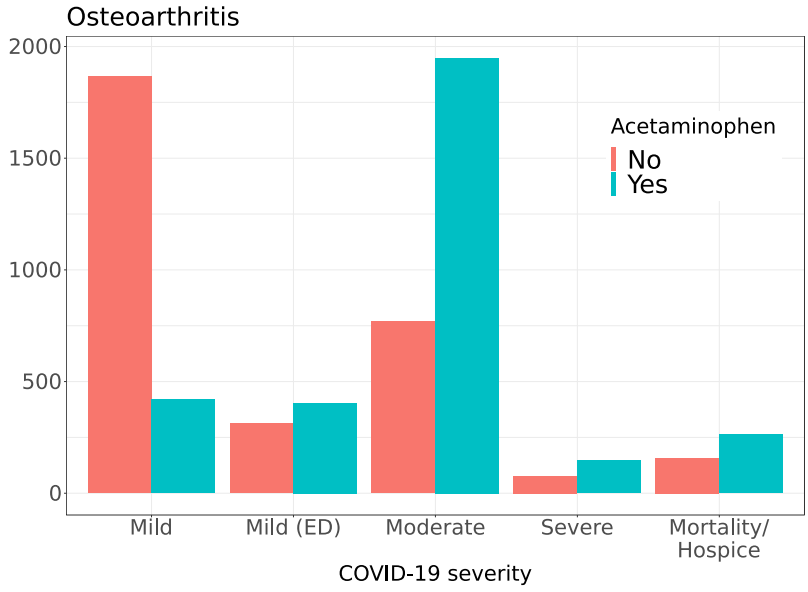


(a)

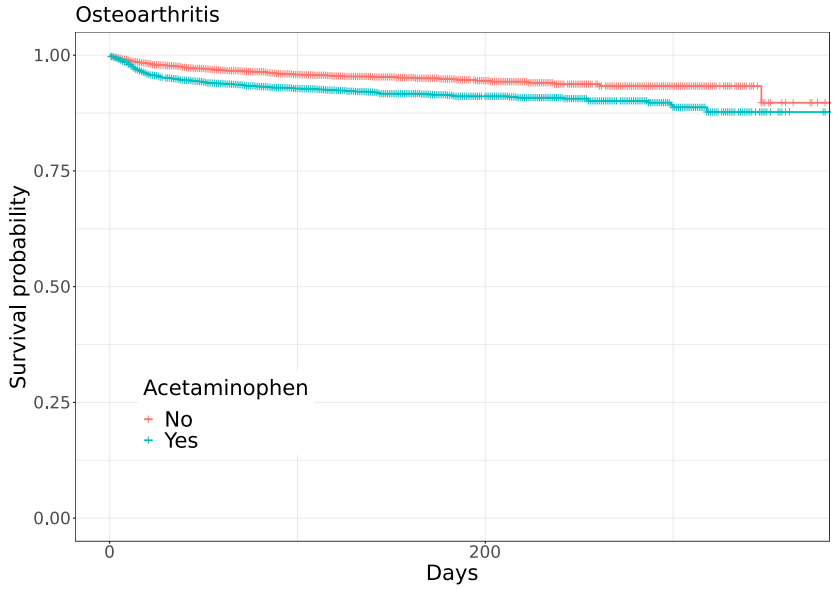


(b)

Figure **S12**: **Naproxen: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S16**. **(b)**. Kaplan Meier Curve. See Table **S37** for corresponding Cox multiple regression analysis.

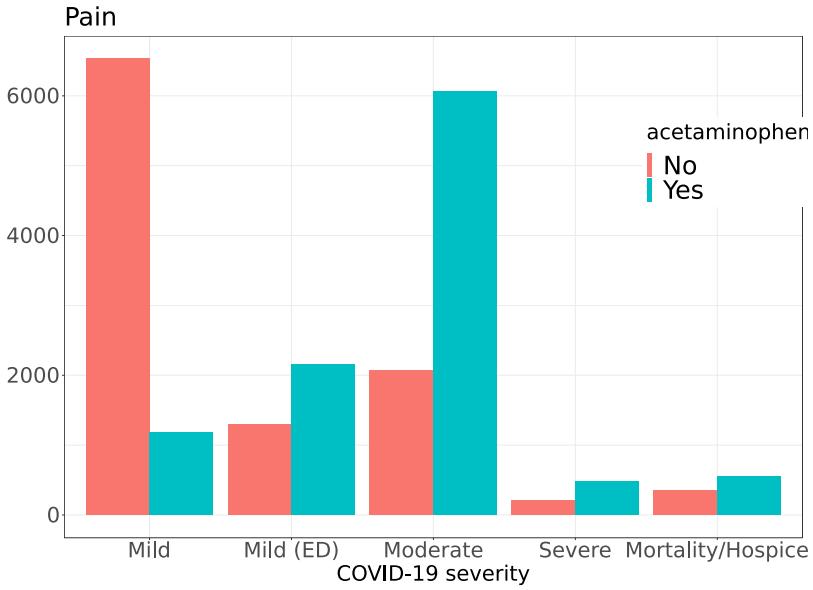


(a)



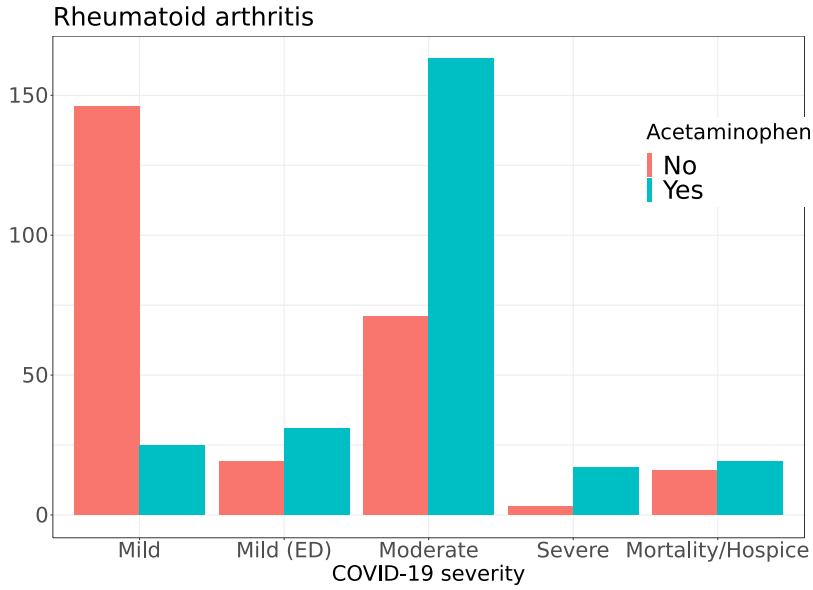
(b)

Figure **S13**: **Acetaminophen: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S17**. **(b)**. Kaplan Meier Curve. See Table **S38** for corresponding Cox multiple regression analysis.

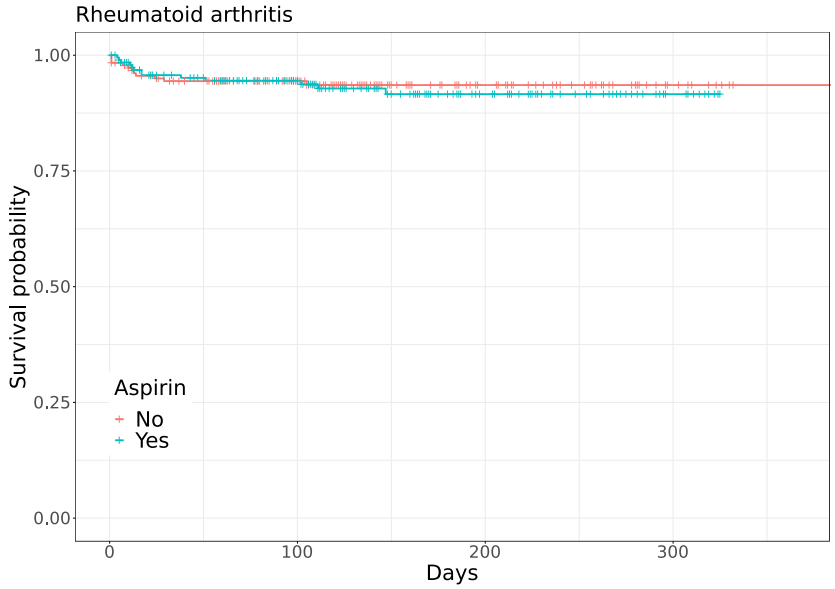


(a)

Figure **S14**: **Acetaminophen: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S18**.

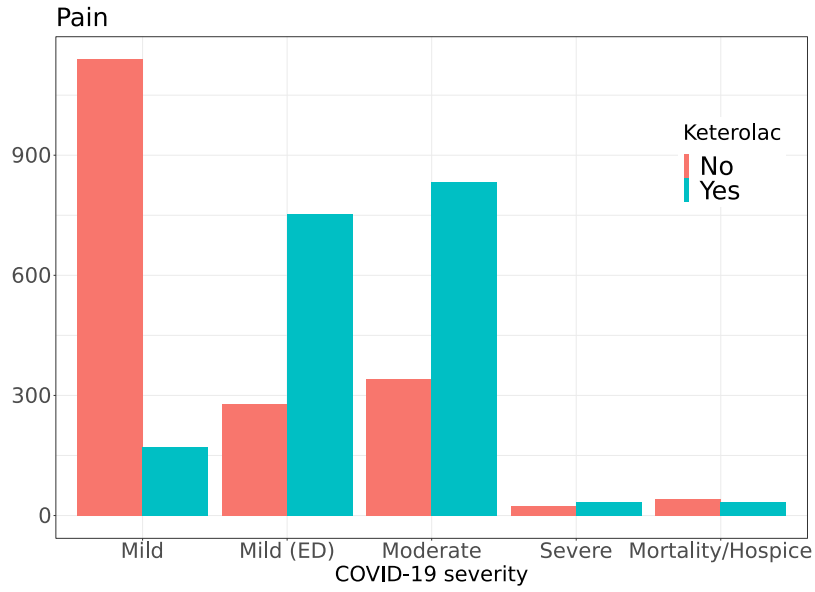


(a)

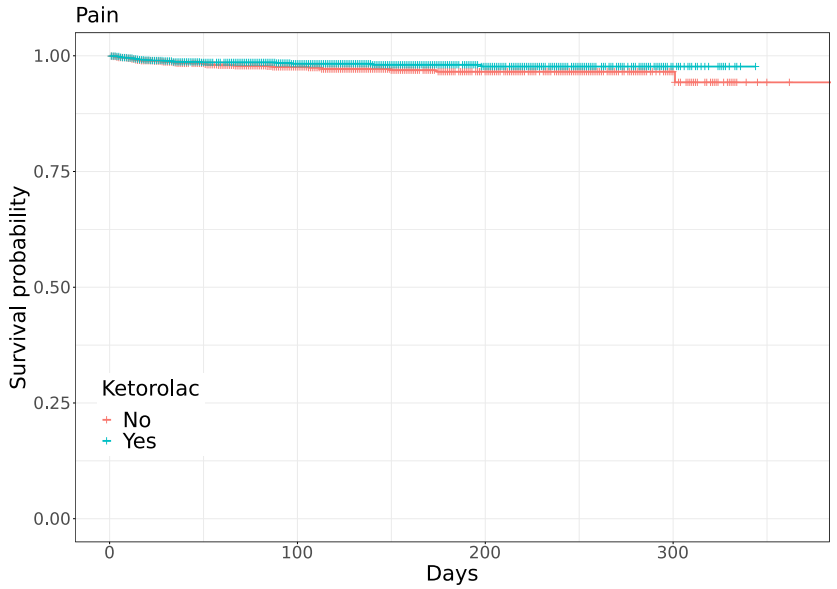


(b)

Figure **S15**: **Acetaminophen: Rheumatoid arthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S19**. **(b)**. Kaplan Meier Curve. See Table **S40** for corresponding Cox multiple regression analysis.

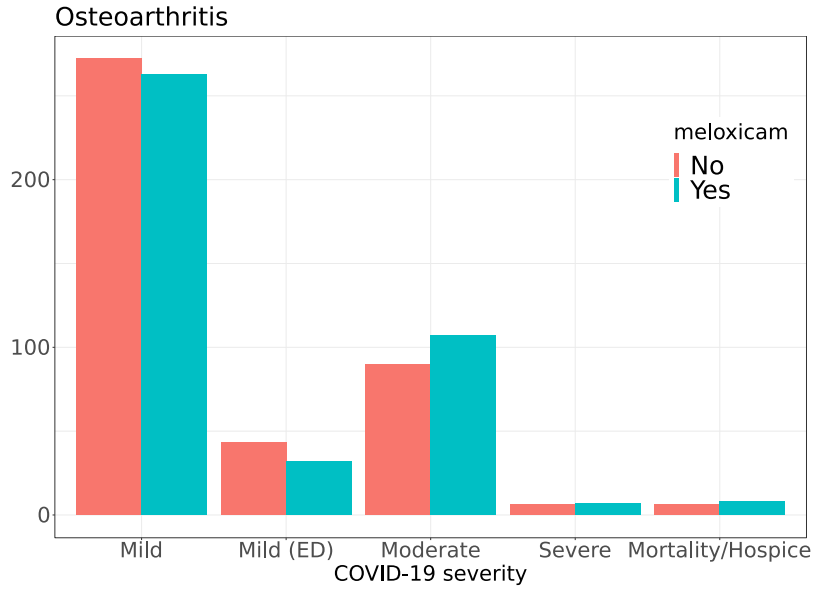


(a)

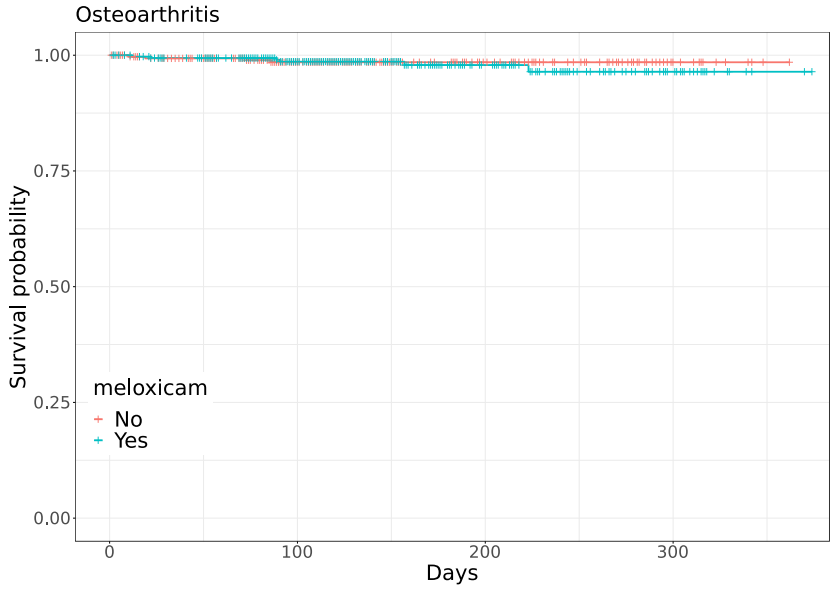


(b)

Figure **S16**: **Ketorolac: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S20**. **(b)**. Kaplan Meier Curve. See Table **S41** for corresponding Cox multiple regression analysis.

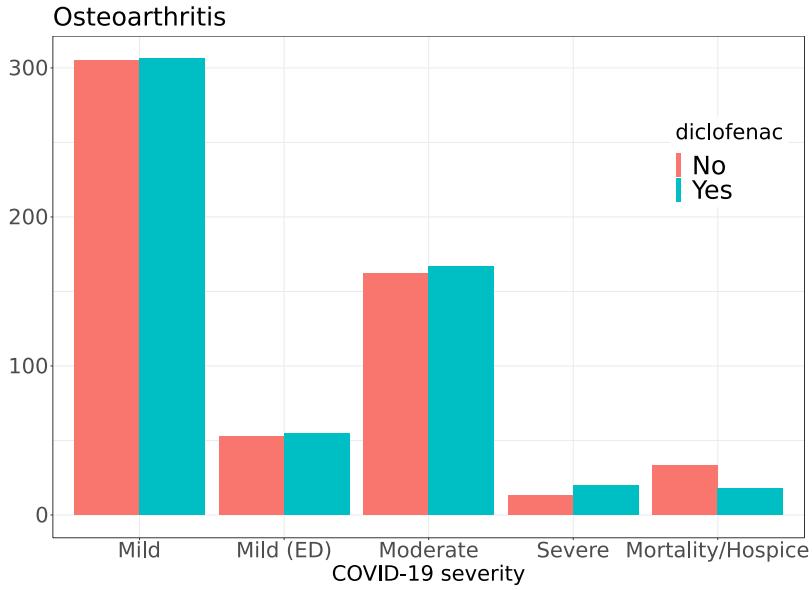


(a)



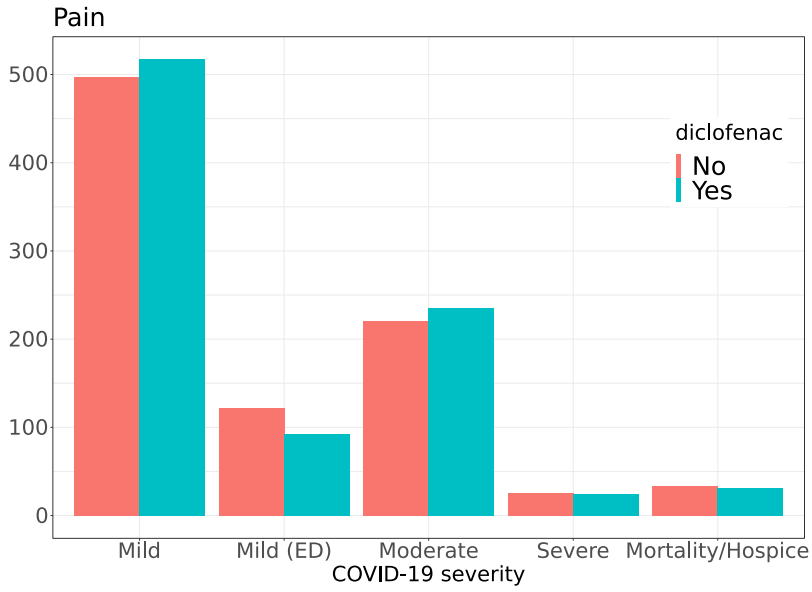
(b)

Figure **S17**: **Meloxicam: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S21**. **(b)**. Kaplan Meier Curve. See Table **S42** for corresponding Cox multiple regression analysis.

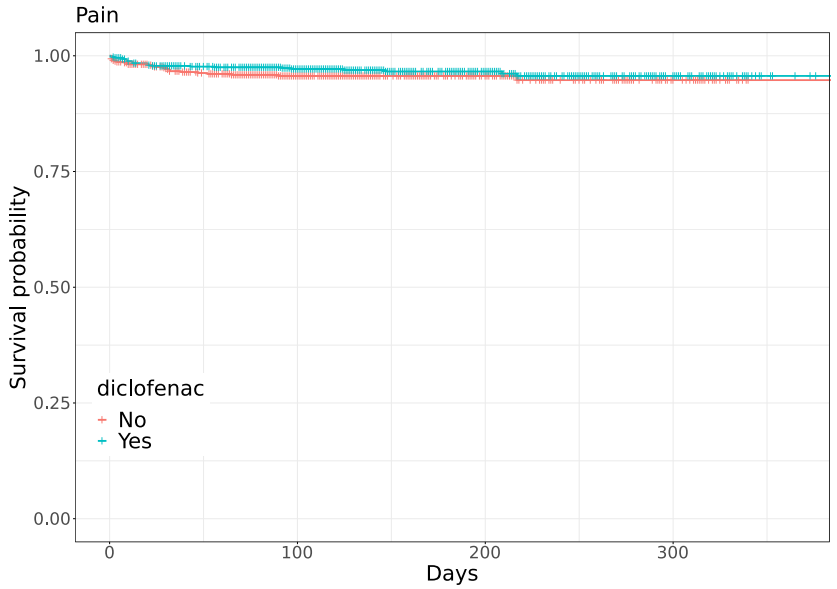


(a)

Figure **S18**: **Diclofenac: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S22**.

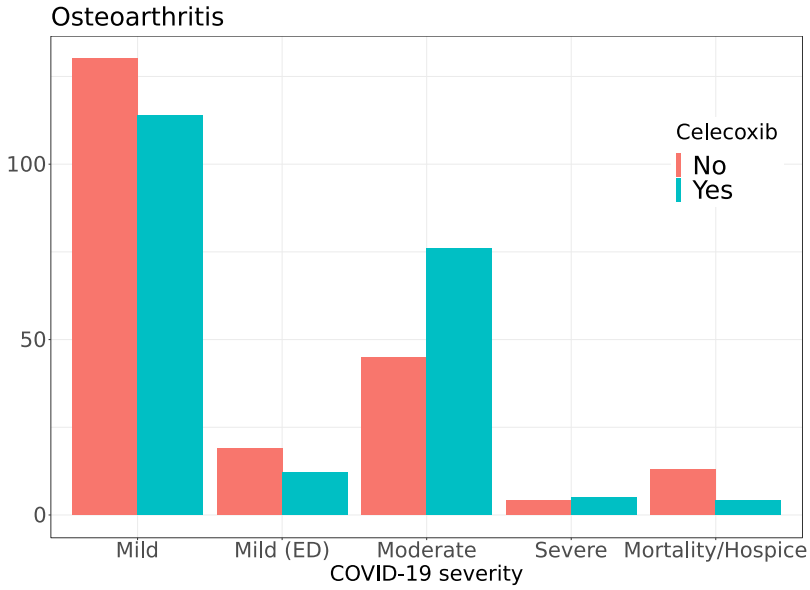


(a)

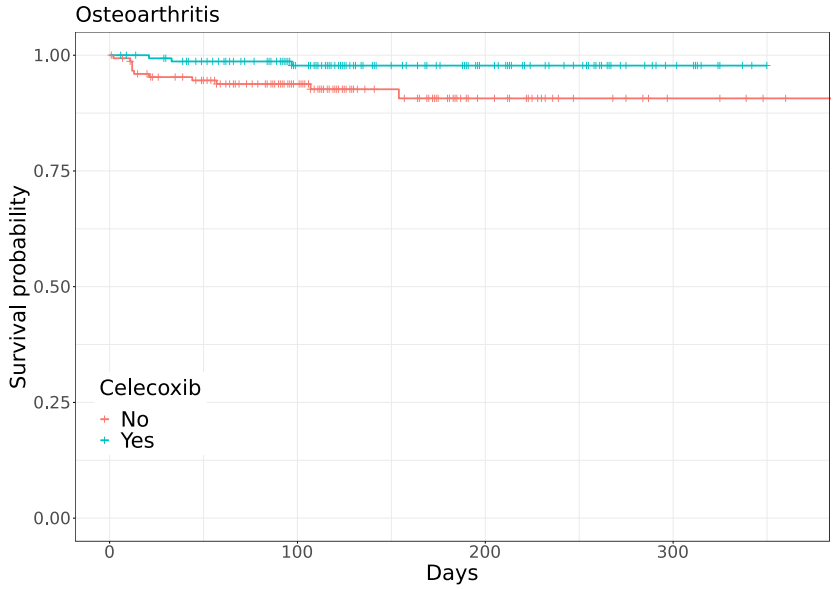


(b)

Figure **S19**: **Diclofenac: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S23**. **(b)**. Kaplan Meier Curve. See Table **S44** for corresponding Cox multiple regression analysis.

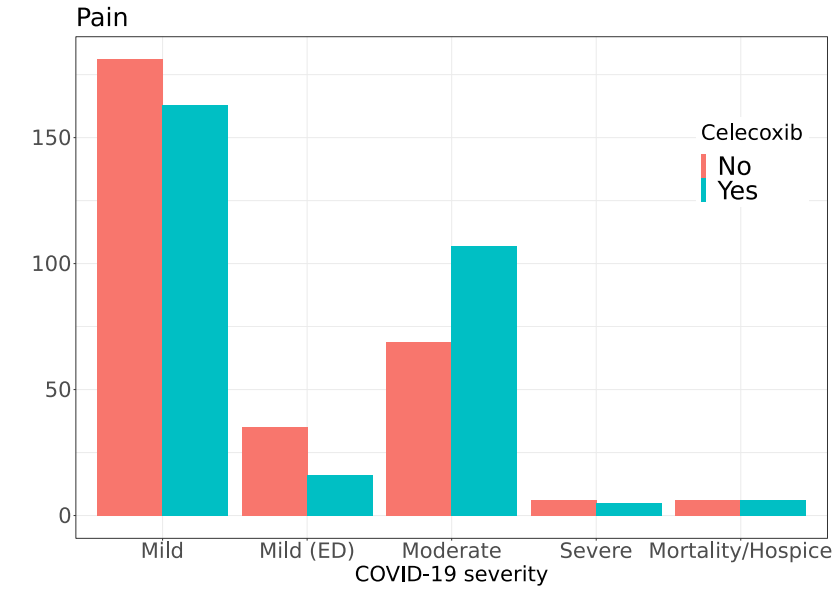


(a)

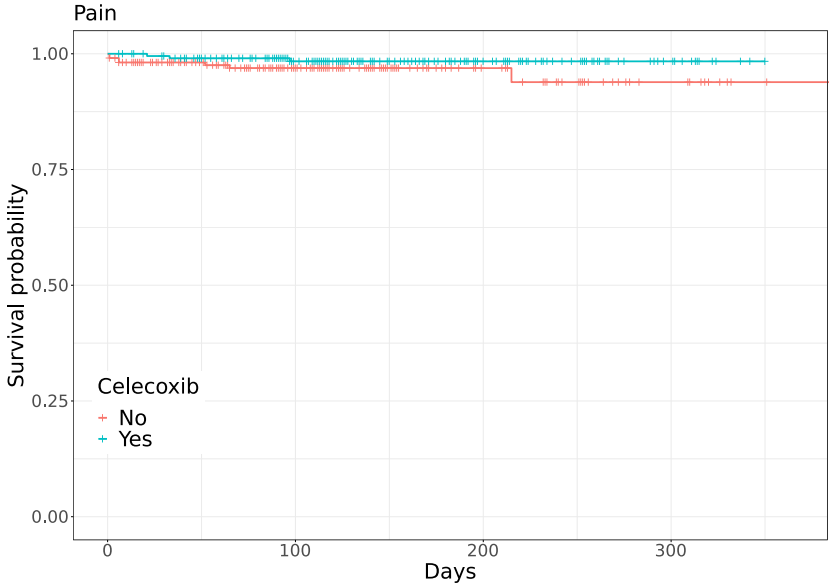


(b)

Figure **S20**: **Celecoxib: Osteoarthritis**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S24**. **(b)**. Kaplan Meier Curve. See Table **S45** for corresponding Cox multiple regression analysis.



(a)



(b)

Figure **S21**: **Celecoxib: Pain**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S25**. **(b)**. Kaplan Meier Curve. See Table **S46** for corresponding Cox multiple regression analysis.

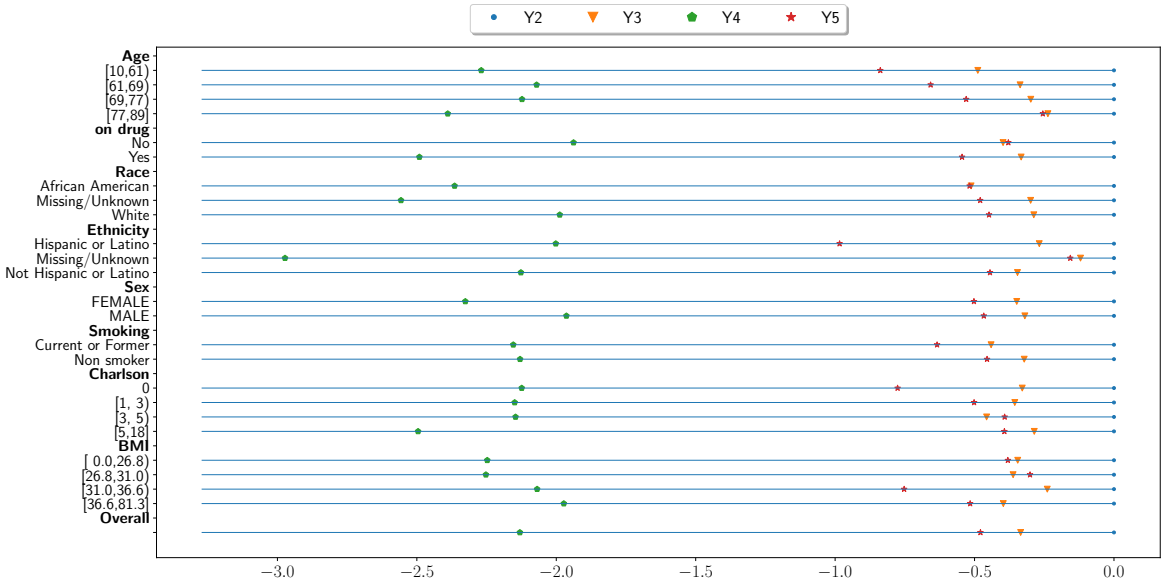


Figure **S22**: **Assessment of proportional odds assumption**. We assessed the proportional odds assumption of the ordinal logistic regression (OLR) of the Aspirin–Osteoarthritis data. OLR was performed to predict COVID-19 severity as a function of age, race, ethnicity, gender, smoking status, Charlson Comorbidity Index, and BMI for osteoarthritis cohort either taking aspirin or not ("on drug"). The figure shows predictions from a logit model, used to model the probability that y is greater than or equal to a given value (for each level of y), using one predictor variable at a time. The values represent the (linear) predicted values that would result if the dependent variable is regressed on the predictor variables one at a time, without the parallel slopes assumption. The levels represent the COVID-19 severity levels ("mild", "mild ED", "moderate", "severe", "dead"). Y2: the first set of coefficients to be zero so there is a common reference point. Y3: difference between coefficients for "moderate" and for "mild ED"; Y4: difference between coefficients for "severe" and for "moderate"; Y5: difference between coefficients for "dead" and for "severe". Each of the quantities is plotted with respect to zero, i.e., they are not "stacked". The plot was generated with a Python matplotlib script from the coefficients generated from an ordinal logistic regression produced with the polr function from the MASS R package.

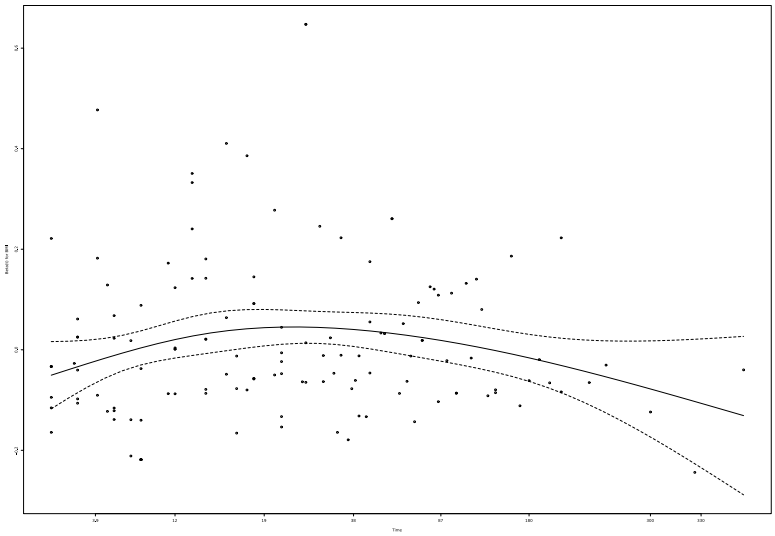
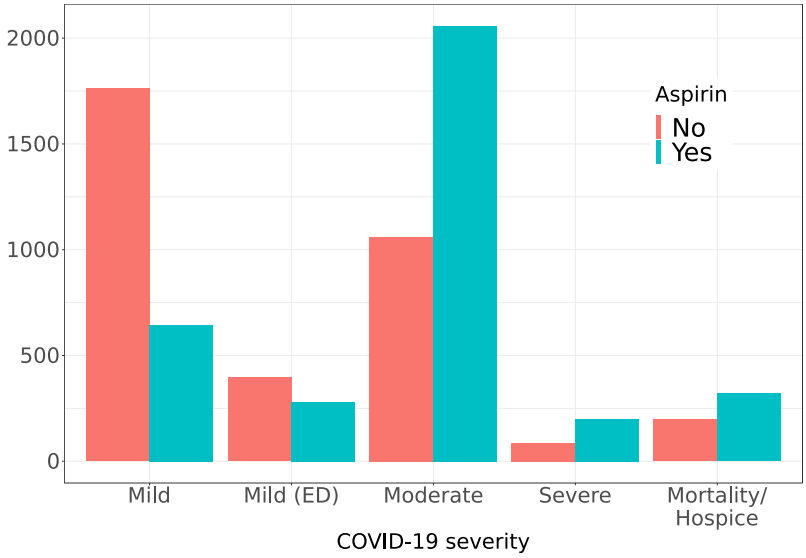
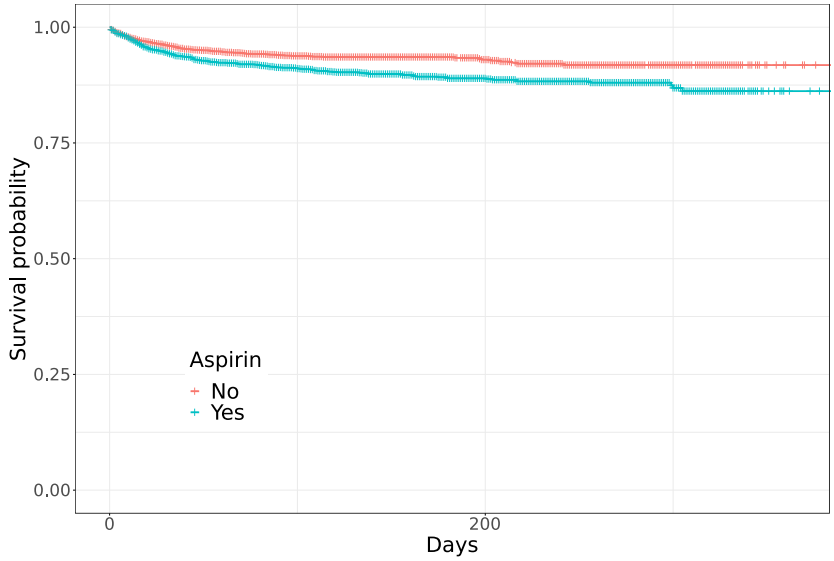


Figure **S23**: **Schoenfeld residuals from Kaplan-Meier survival analysis of a subcohort of Aspirin/osteoarthritis patients**. The analysis corresponds to Figure 2A of the main manuscript. Analysis was performed using the `cox.zph` function of the R `survival` package. P-values were as follows. Age $p = 0.072$, on drug $p = 0.693$, Race $p = 0.673$, ethnicity $p = 0.463$, gender $p = 0.106$, smoking $p = 0.831$, Charlson comoridity score $p = 0.399$, BMI $p = 0.474$, and global $p = 0.486$.

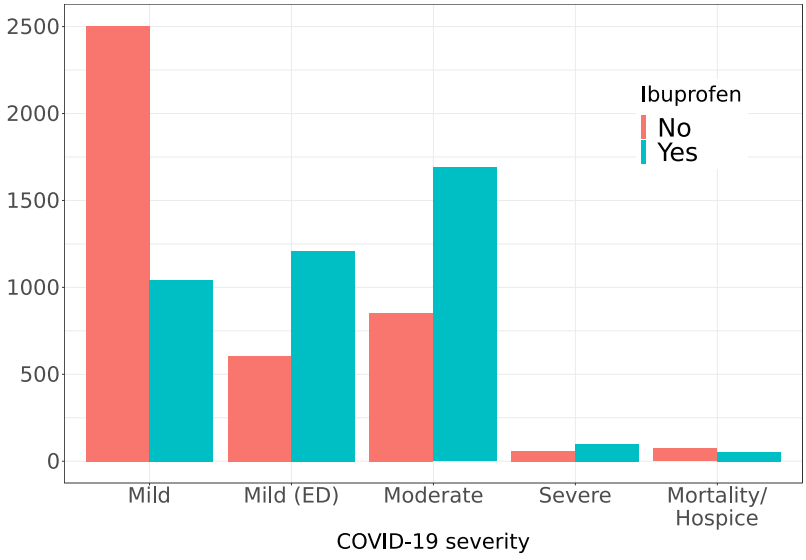


(a)

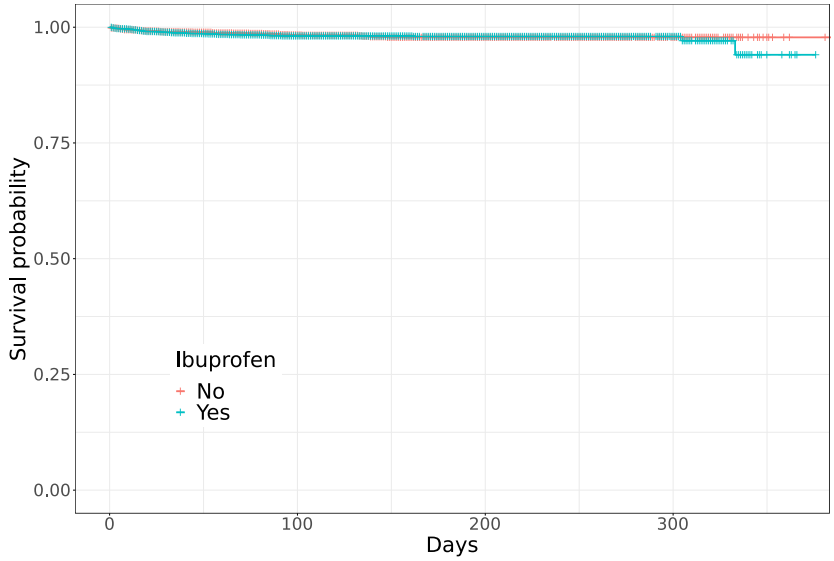


(b)

Figure **S24**: **Aspirin (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S47**. **(b)**. Kaplan Meier Curve. See Table **S55** for corresponding Cox multiple regression analysis.

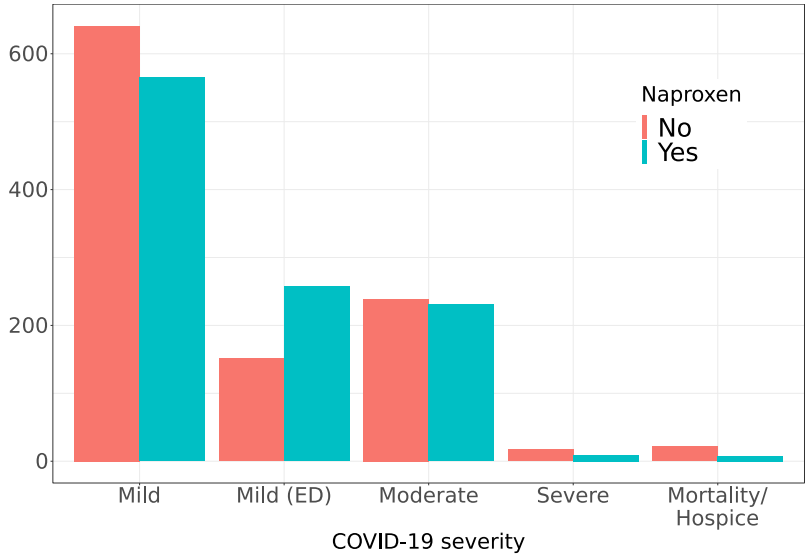


(a)

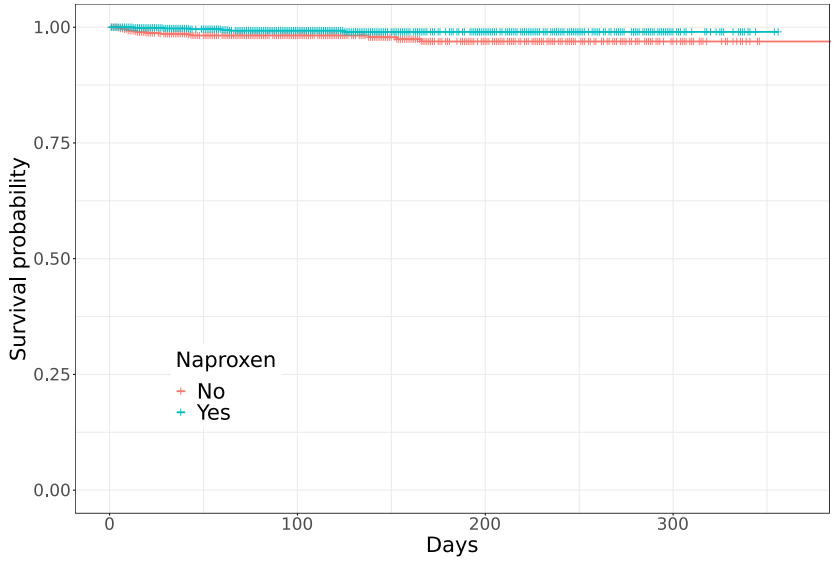


(b)

Figure **S25**: **Ibuprofen (entire subcohort).(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S48**. **(b)**. Kaplan Meier Curve. See Table **S56** for corresponding Cox multiple regression analysis.

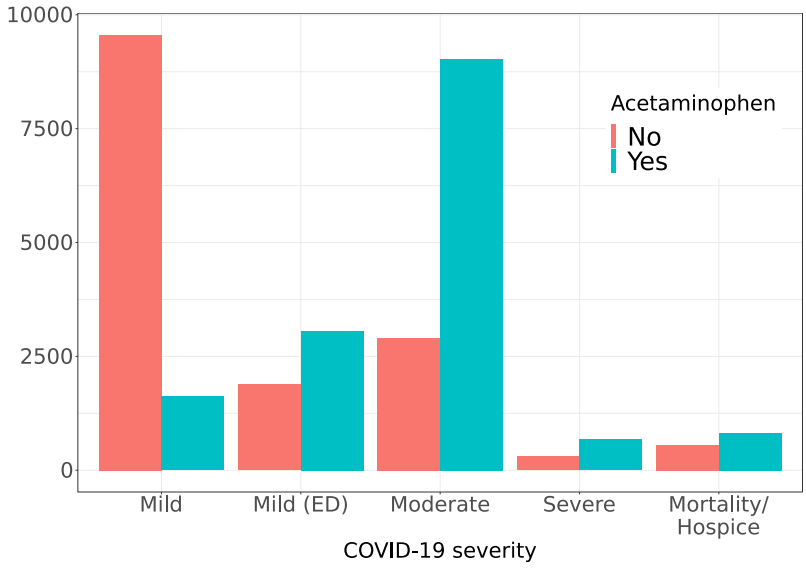


(a)

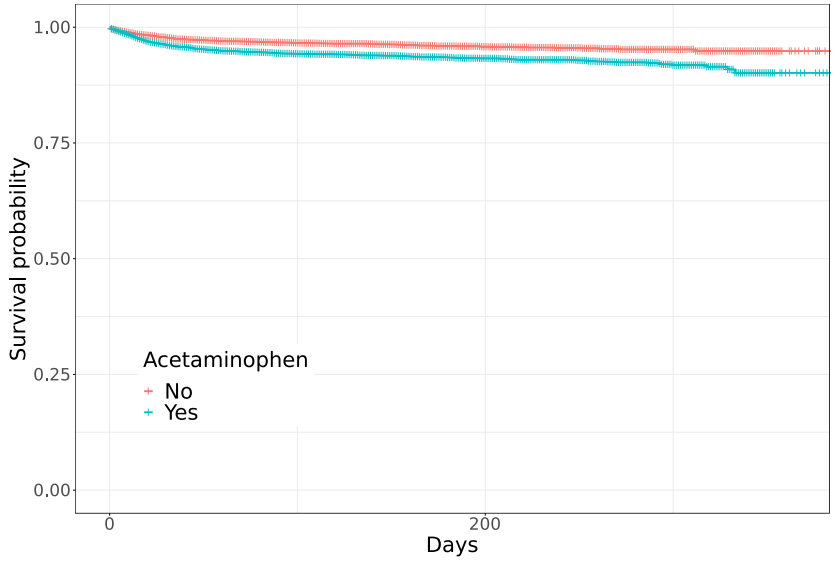


(b)

Figure **S26**: **Naproxen (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S49**. **(b)**. Kaplan Meier Curve. See Table **S57** for corresponding Cox multiple regression analysis.

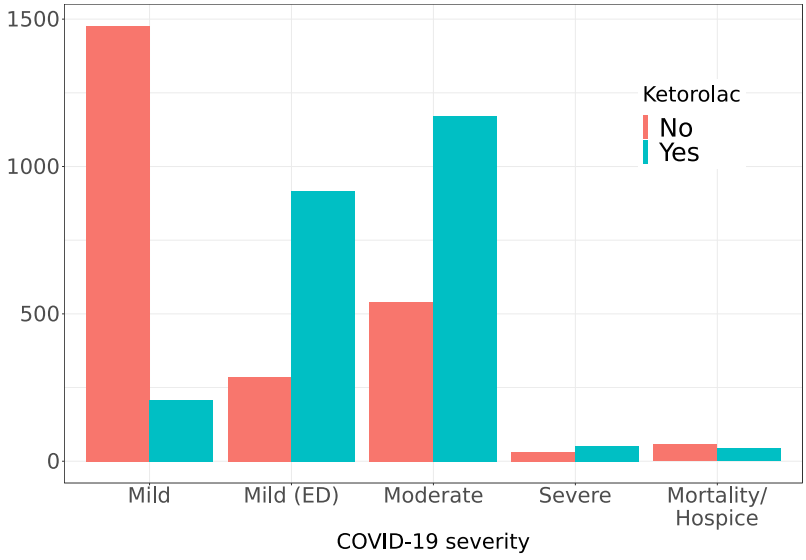


(a)

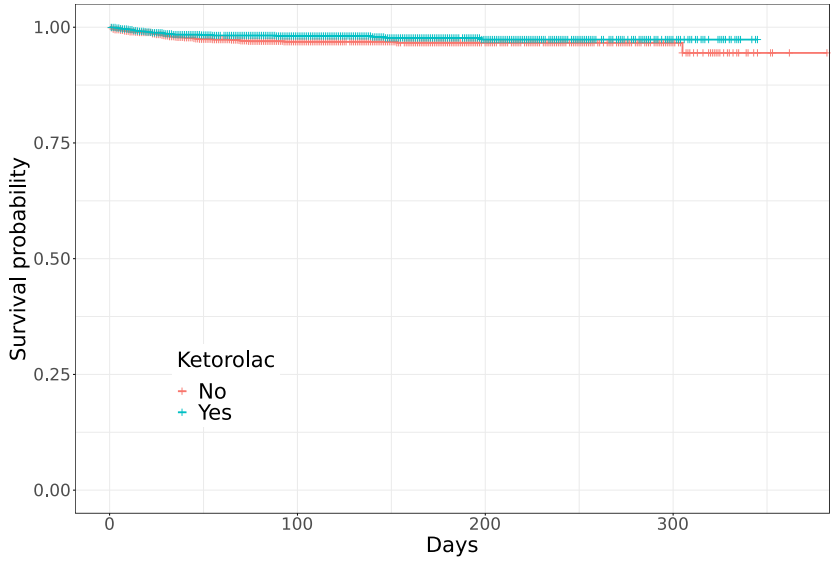


(b)

Figure **S27**: **Acetaminophen (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S50**. **(b)**. Kaplan Meier Curve. See Table **S58** for corresponding Cox multiple regression analysis.

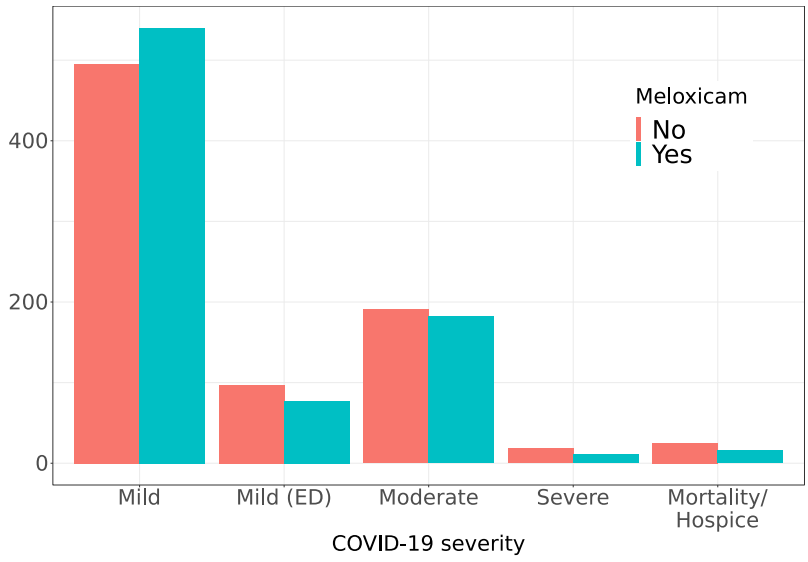


(a)

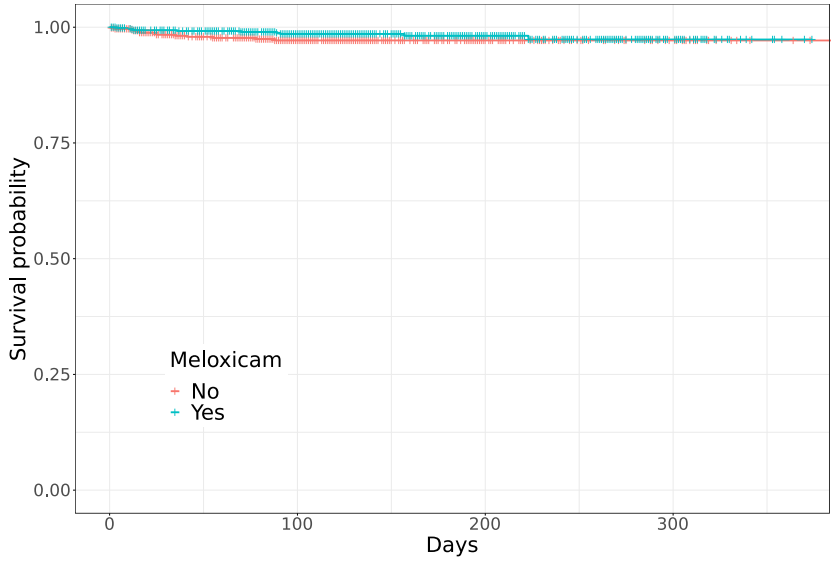


(b)

Figure **S28**: **Ketorolac (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S51**. **(b)**. Kaplan Meier Curve. See Table **S59** for corresponding Cox multiple regression analysis.

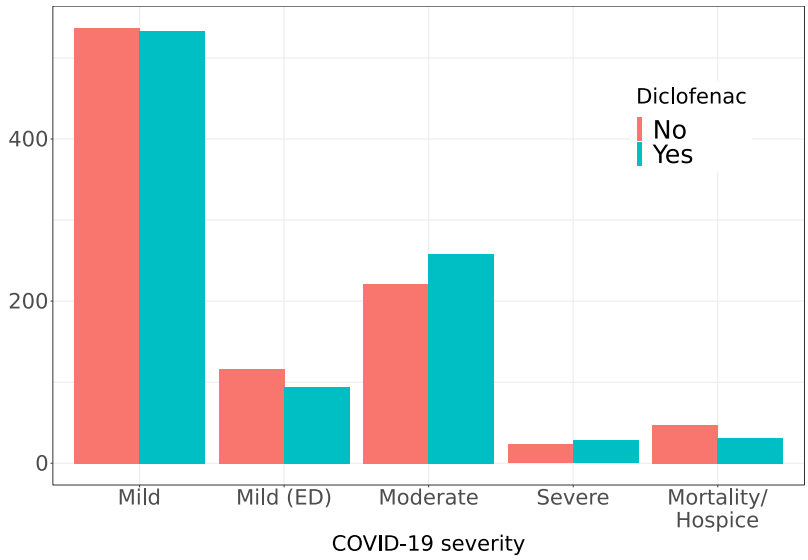


(a)

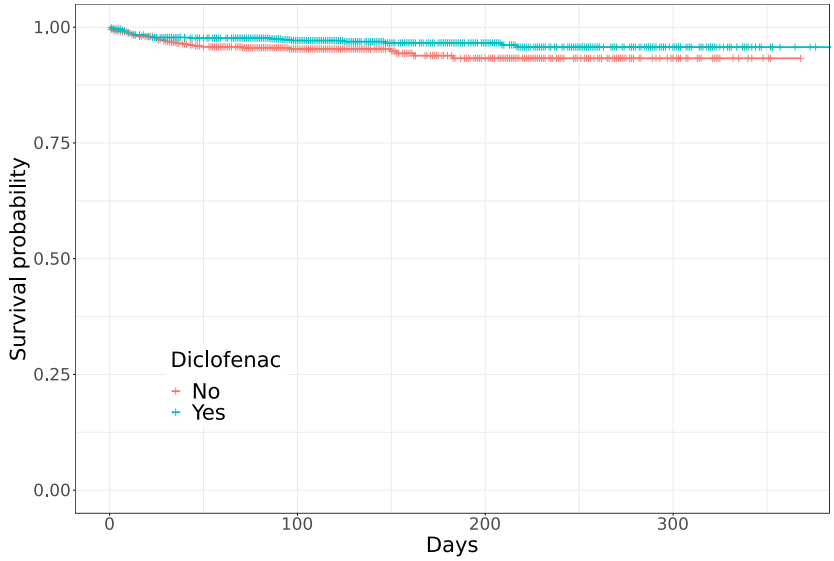


(b)

Figure **S29**: **Meloxicam (entire subcohort).(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S52**. **(b)**. Kaplan Meier Curve. See Table **S60** for corresponding Cox multiple regression analysis.

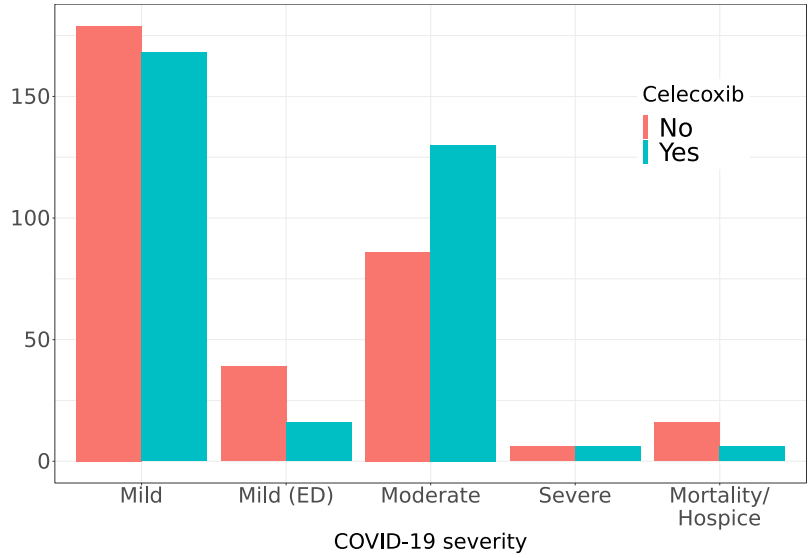


(a)

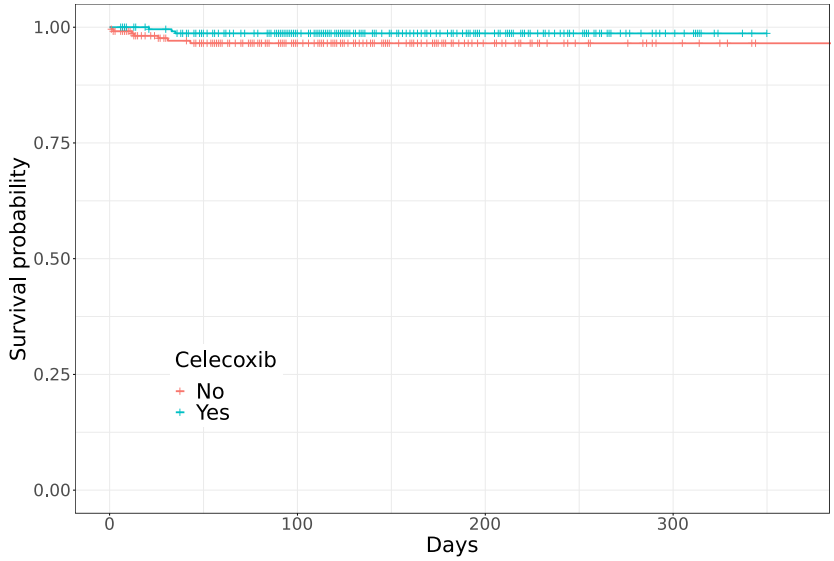


(b)

Figure **S30**: **Diclofenac (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S53**. **(b)**. Kaplan Meier Curve. See Table **S61** for corresponding Cox multiple regression analysis.



(a)



(b)

Figure **S31**: **Celecoxib (entire subcohort)**.**(a)** Ordinal Logistic Regression Analysis. Y axis: number of individuals in the indicated category. See Table **S54**. **(b)**. Kaplan Meier Curve. See Table **S62** for corresponding Cox multiple regression analysis.

n	250,553
Age	41.6 ± 20.6
BMI	29.5 ± 17.8
Charlson comorbidity index	0.58 ± 1.51
Severity Type	
- Mild	175,673 (70.1%)
- Mild ED	28,160 (11.2%)
- Moderate	38,139 (15.2%)
- Severe	3147 (1.3%)
- Death/hospice	5434 (2.2%)
Race	
- African American	41,352 (16.5%)
- Asian	6460 (2.%)
- Pacific Islander	588 (0.2%)
- White	142,692 (57.0%)
- Other	5316 (2.1%)
- Unknown	54,145 (21.6%)
Ethnicity	
- Hispanic or Latino	38,885 (15.5%)
- Not Hispanic or Latino	182,151 (72.7%)
- Unknown	29,517 (15.5%)
Sex	
- Female	134,633 (53.7%)
- Male	115,828 (46.2%)
- Other	92 (.00%)
Smoking status	
- Current or Former	15813 (6.3%)
- Nonsmoker	234,740 (93.7%)

Table **S1**: **Demographic characteristics of patients with COVID-19 included in this study**. Data from up to February 2, 2021 were included

Indication	Concept id
Angina pectoris	321318
Headache	378253
Migraine	318736
Myocardial infarction	4329847
Osteoarthritis	80180
Pain	4329041
Rheumatoid arthritis	80809

Table **S2**: **OMOP concept ids for disease indications**. For each indication, the concept id shown and all its descendants were used for analysis. The concept set 430608021 version 1 from the N3C enclave was used for Fever. Codesets retrieved March 1, 2021.

Medication	Concept id
aspirin	1112807
ibuprofen	1177480
naproxen	1115008
ketorolac	1136980
meloxicam	1150345
diclofenac	1124300
celecoxib	1118084
acetaminophen	1125315

Table **S3**: **OMOP concept ids for medications**. For each medication, the concept id shown and all its descendants were used for analysis. Codesets retrieved March 1, 2021.

medication	indication	Odds ratio	Evalue (OR)	Evalue (2.5% CI)
aspirin	angina pectoris	2.7 (2.0-3.6)	2.7	2.2
	fever	3.5 (2.9-4.3)	3.1	2.8
	migraine	3.0 (1.9-4.5)	2.8	2.1
	myocardial infarction	2.4 (1.9-2.9)	2.4	2.1
	osteoarthritis	3.2 (2.8-3.8)	3.0	2.7
	pain	4.6 (4.1-5.2)	3.7	3.5
	rheumatoid arthritis	3.4 (1.9-6.1)	3.1	2.1
ibuprofen	fever	3.5 (3.0-4.1)	3.1	2.9
	headache	3.0 (2.5-3.6)	2.9	2.5
	osteoarthritis	2.4 (2.0-3.0)	2.5	2.1
	pain	3.6 (3.2-4.0)	3.2	3.0
naproxen	pain	1.3 (1.1-1.6)	1.6	1.3
acetaminophen	osteoarthritis	6.4 (5.8-7.1)	4.5	4.2
	pain	9.1 (8.5-9.6)	5.5	5.3
	rheumatoid arthritis	6.7 (4.6-9.6)	4.6	3.7
ketorolac	pain	6.5 (5.7-7.5)	4.6	4.2
meloxicam	osteoarthritis	1.1 (0.8-1.4)	1.2	1.0
diclofenac	osteoarthritis	1.0 (0.8-1.3)	1.1	1.0
	pain	0.9 (0.8-1.1)	1.2	n/a
celecoxib	osteoarthritis	1.4 (1.0-2.1)	1.7	1.0
	pain	1.4 (1.0-1.9)	1.6	1.0

Table **S4**: **Evalue analysis**. Analysis was performed with the R Evalue package. E-values are shown for the point estimate and the lower confidence interval limit.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.02-1.05)	5.08	<0.001
On drug	2.58 (1.93-3.44)	6.43	<0.001
African American	1.11 (0.46-2.67)	0.23	1.00
Unknown race	1.08 (0.38-3.06)	0.15	1.00
Pacific Islander	1.72 (0.21-13.95)	0.51	1.00
Other race	1.01 (0.26-3.88)	0.01	1.00
White	0.85 (0.36-2.00)	-0.37	1.00
Unknown ethnicity	0.82 (0.30-2.23)	-0.38	1.00
Not Hispanic	0.69 (0.38-1.27)	-1.19	1.00
Male	1.26 (0.93-1.71)	1.51	1.00
Non-smoker	0.86 (0.57-1.29)	-0.73	1.00
Charlson score	1.13 (1.07-1.19)	4.37	<0.001
BMI	1.02 (1.00-1.04)	1.61	1.00

Table **S5**: **Aspirin (Angina pectoris)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.05)	11.30	<0.001
On drug	3.50 (2.88-4.26)	12.53	<0.001
African American	2.98 (1.50-5.90)	3.13	0.04
Unknown race	1.86 (0.90-3.86)	1.67	1.00
Pacific Islander	4.75 (0.15-149.05)	0.89	1.00
Other race	1.91 (0.46-7.96)	0.88	1.00
White	1.71 (0.88-3.33)	1.59	1.00
Unknown ethnicity	1.36 (0.80-2.30)	1.14	1.00
Not Hispanic	0.59 (0.41-0.85)	-2.85	0.09
Male	1.43 (1.18-1.73)	3.63	0.006
Non-smoker	0.95 (0.71-1.27)	-0.33	1.00
Charlson score	1.13 (1.09-1.17)	6.93	<0.001
BMI	1.01 (1.00-1.02)	2.00	0.96

Table **S6**: **Aspirin (Fever)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	**Odds Ratio (2.5–97.5% CI)**	**t-value**	**p-value**
Age	1.02 (1.01-1.04)	3.13	0.04
On drug	2.95 (1.93-4.51)	4.99	$<$0.001
African American	1.13 (0.21-6.18)	0.14	1.00
Unknown race	0.40 (0.05-2.96)	-0.90	1.00
Pacific Islander	0.75 (0.05-10.99)	-0.21	1.00
White	0.62 (0.12-3.26)	-0.57	1.00
Not Hispanic	0.27 (0.10-0.74)	-2.53	0.24
Male	1.18 (0.69-2.00)	0.60	1.00
Non-smoker	0.94 (0.47-1.87)	-0.18	1.00
Charlson score	1.09 (1.00-1.20)	1.89	1.00
BMI	0.99 (0.96-1.01)	-0.98	1.00

Table **S7**: **Aspirin (Migraine)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	**Odds Ratio (2.5–97.5% CI)**	**t-value**	**p-value**
Age	1.03 (1.02-1.04)	7.35	<0.001
On drug	2.36 (1.91-2.91)	8.03	<0.001
African American	1.12 (0.55-2.28)	0.31	1.00
Unknown race	0.72 (0.32-1.64)	-0.78	1.00
Pacific Islander	0.43 (0.05-3.81)	-0.75	1.00
Other race	1.50 (0.45-5.08)	0.66	1.00
White	0.69 (0.34-1.40)	-1.02	1.00
Unknown ethnicity	1.50 (0.80-2.81)	1.28	1.00
Not Hispanic	0.52 (0.34-0.79)	-3.07	0.04
Male	1.13 (0.91-1.41)	1.15	1.00
Non-smoker	0.92 (0.69-1.23)	-0.54	1.00
Charlson score	1.04 (0.99-1.08)	1.71	1.00
BMI	1.00 (0.99-1.02)	0.31	1.00

Table **S8**: **Aspirin (Myocardial infarction)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.05)	10.73	<0.001
On drug	3.25 (2.76-3.83)	14.12	<0.001
African American	1.78 (0.97-3.25)	1.87	1.00
Unknown race	0.97 (0.48-1.96)	-0.07	1.00
Pacific Islander	4.38 (0.66-29.06)	1.53	1.00
Other race	2.58 (0.91-7.32)	1.78	1.00
White	1.05 (0.58-1.89)	0.15	1.00
Unknown ethnicity	1.03 (0.57-1.84)	0.08	1.00
Not Hispanic	0.49 (0.34-0.72)	-3.67	0.005
Male	1.34 (1.14-1.57)	3.54	0.008
Non-smoker	0.73 (0.58-0.93)	-2.62	0.18
Charlson score	1.16 (1.12-1.20)	9.55	<0.001
BMI	1.01 (1.00-1.02)	1.75	1.00

Table **S9**: **Aspirin (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.03-1.03)	15.29	<0.001
On drug	4.62 (4.14-5.15)	27.62	<0.001
African American	1.03 (0.72-1.49)	0.17	1.00
Unknown race	0.67 (0.44-1.00)	-1.94	1.00
Pacific Islander	0.78 (0.30-2.04)	-0.51	1.00
Other race	0.79 (0.44-1.43)	-0.79	1.00
White	0.65 (0.45-0.93)	-2.37	0.37
Unknown ethnicity	1.50 (1.07-2.08)	2.38	0.36
Not Hispanic	0.57 (0.47-0.70)	-5.32	<0.001
Male	1.36 (1.23-1.51)	5.80	<0.001
Non-smoker	0.88 (0.74-1.03)	-1.59	1.00
Charlson score	1.14 (1.11-1.16)	11.78	<0.001
BMI	1.01 (1.00-1.02)	2.59	0.20

Table **S10**: **Aspirin (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.02-1.07)	3.33	0.02
On drug	3.36 (1.86-6.07)	4.02	0.001
African American	2.17 (0.36-13.03)	0.85	1.00
Unknown race	0.91 (0.06-13.97)	-0.07	1.00
Other race	3.50 (0.07-166.59)	0.64	1.00
White	1.38 (0.24-8.07)	0.36	1.00
Unknown ethnicity	1.43 (0.10-20.08)	0.26	1.00
Not Hispanic	0.38 (0.11-1.38)	-1.47	1.00
Male	0.89 (0.47-1.68)	-0.36	1.00
Non-smoker	1.28 (0.59-2.77)	0.63	1.00
Charlson score	1.07 (0.97-1.18)	1.42	1.00
BMI	1.01 (0.97-1.05)	0.49	1.00

Table **S11**: **Aspirin (Rheumatoid arthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.02-1.03)	10.74	<0.001
On drug	3.50 (3.00-4.09)	15.86	<0.001
African American	1.36 (0.85-2.17)	1.27	1.00
Unknown race	1.21 (0.72-2.03)	0.70	1.00
Pacific Islander	0.78 (0.09-6.51)	-0.23	1.00
Other race	0.89 (0.47-1.71)	-0.34	1.00
White	0.92 (0.57-1.46)	-0.37	1.00
Unknown ethnicity	1.22 (0.78-1.90)	0.88	1.00
Not Hispanic	0.59 (0.46-0.77)	-3.93	0.002
Male	1.30 (1.12-1.52)	3.44	0.01
Non-smoker	0.79 (0.63-0.99)	-2.06	0.84
Charlson score	1.19 (1.13-1.25)	7.11	<0.001
BMI	1.00 (0.99-1.01)	0.77	1.00

Table **S12**: **Ibuprofen (Fever)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.01-1.03)	6.75	<0.001
On drug	3.01 (2.49-3.64)	11.30	<0.001
African American	1.11 (0.64-1.93)	0.36	1.00
Unknown race	0.61 (0.32-1.15)	-1.53	1.00
Other race	0.53 (0.23-1.22)	-1.49	1.00
White	0.62 (0.35-1.07)	-1.72	1.00
Unknown ethnicity	3.59 (1.54-8.37)	2.96	0.07
Not Hispanic	0.50 (0.36-0.71)	-3.97	0.002
Male	1.26 (1.03-1.54)	2.24	0.53
Non-smoker	0.79 (0.61-1.03)	-1.73	1.00
Charlson score	1.16 (1.09-1.23)	4.93	<0.001
BMI	1.01 (1.00-1.02)	1.99	0.97

Table **S13**: **Ibuprofen (Headache)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.05)	8.42	<0.001
On drug	2.44 (1.96-3.04)	8.00	<0.001
African American	0.54 (0.25-1.18)	-1.55	1.00
Unknown race	0.30 (0.12-0.73)	-2.64	0.17
Other race	0.12 (0.03-0.50)	-2.90	0.08
White	0.32 (0.15-0.70)	-2.84	0.09
Unknown ethnicity	1.86 (0.77-4.52)	1.37	1.00
Not Hispanic	0.63 (0.40-0.99)	-1.99	0.97
Male	1.32 (1.05-1.66)	2.40	0.34
Non-smoker	0.68 (0.47-0.98)	-2.10	0.76
Charlson score	1.17 (1.11-1.24)	5.57	<0.001
BMI	1.01 (1.00-1.03)	2.01	0.94

Table **S14**: **Ibuprofen (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.02-1.02)	12.95	<0.001
On drug	3.60 (3.25-3.99)	24.30	<0.001
African American	1.31 (0.95-1.82)	1.64	1.00
Unknown race	0.78 (0.54-1.12)	-1.37	1.00
Pacific Islander	1.25 (0.50-3.12)	0.48	1.00
Other race	0.85 (0.52-1.37)	-0.67	1.00
White	0.79 (0.57-1.09)	-1.45	1.00
Unknown ethnicity	1.34 (0.96-1.87)	1.73	1.00
Not Hispanic	0.55 (0.46-0.65)	-6.72	<0.001
Male	1.32 (1.19-1.47)	5.28	<0.001
Non-smoker	0.72 (0.61-0.84)	-4.07	<0.001
Charlson score	1.15 (1.11-1.19)	7.93	<0.001
BMI	1.01 (1.00-1.02)	2.89	0.08

Table **S15**: **Ibuprofen (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.01 (1.01-1.02)	4.27	<0.001
On drug	1.33 (1.11-1.59)	3.13	0.04
African American	1.54 (0.83-2.85)	1.37	1.00
Unknown race	0.68 (0.35-1.33)	-1.13	1.00
Pacific Islander	0.59 (0.09-3.87)	-0.54	1.00
Other race	0.72 (0.30-1.71)	-0.74	1.00
White	0.68 (0.37-1.25)	-1.24	1.00
Unknown ethnicity	0.64 (0.34-1.20)	-1.39	1.00
Not Hispanic	0.44 (0.33-0.59)	-5.48	<0.001
Male	1.21 (1.00-1.46)	1.99	0.98
Non-smoker	0.61 (0.47-0.80)	-3.57	0.007
Charlson score	1.26 (1.19-1.34)	7.33	<0.001
BMI	1.01 (1.00-1.02)	1.34	1.00

Table **S16**: **Naproxen (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.04)	17.70	<0.001
On drug	6.39 (5.75-7.09)	34.90	<0.001
African American	1.37 (0.93-2.02)	1.60	1.00
Unknown race	0.75 (0.49-1.17)	-1.27	1.00
Pacific Islander	1.23 (0.04-41.44)	0.12	1.00
Other race	0.93 (0.51-1.69)	-0.25	1.00
White	0.75 (0.51-1.10)	-1.48	1.00
Unknown ethnicity	1.08 (0.79-1.47)	0.49	1.00
Not Hispanic	0.48 (0.38-0.61)	-5.99	<0.001
Male	1.46 (1.32-1.61)	7.44	<0.001
Non-smoker	0.81 (0.70-0.95)	-2.70	0.15
Charlson score	1.17 (1.14-1.19)	15.07	<0.001
BMI	1.01 (1.01-1.02)	4.37	<0.001

Table **S17**: **Acetaminophen (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.03)	31.00	<0.001
On drug	9.05 (8.53-9.60)	73.29	<0.001
African American	1.15 (0.97-1.36)	1.62	1.00
Unknown race	0.76 (0.63-0.91)	-2.92	0.07
Pacific Islander	1.25 (0.72-2.17)	0.80	1.00
Other race	0.84 (0.64-1.10)	-1.28	1.00
White	0.68 (0.58-0.80)	-4.59	<0.001
Unknown ethnicity	1.17 (1.02-1.35)	2.26	0.50
Not Hispanic	0.59 (0.54-0.65)	-10.47	<0.001
Male	1.24 (1.18-1.31)	7.85	<0.001
Non-smoker	0.79 (0.72-0.86)	-5.17	<0.001
Charlson score	1.18 (1.16-1.19)	23.17	<0.001
BMI	1.01 (1.01-1.01)	5.74	<0.001

Table **S18**: **Acetaminophen (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.04)	4.73	<0.001
On drug	6.66 (4.62-9.59)	10.17	<0.001
African American	0.36 (0.09-1.44)	-1.45	1.00
Unknown race	0.47 (0.10-2.25)	-0.95	1.00
Other race	0.09 (0.02-0.48)	-2.79	0.11
White	0.26 (0.07-1.01)	-1.94	1.00
Unknown ethnicity	2.03 (0.75-5.56)	1.39	1.00
Not Hispanic	1.04 (0.53-2.04)	0.12	1.00
Male	1.45 (0.99-2.12)	1.90	1.00
Non-smoker	0.76 (0.44-1.31)	-0.99	1.00
Charlson score	1.10 (1.02-1.18)	2.39	0.35
BMI	1.02 (1.00-1.05)	2.14	0.68

Table **S19**: **Acetaminophen (Rheumatoid arthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.01-1.02)	8.27	<0.001
On drug	6.55 (5.72-7.50)	27.22	<0.001
African American	1.04 (0.68-1.61)	0.20	1.00
Unknown race	0.78 (0.49-1.25)	-1.04	1.00
Pacific Islander	0.53 (0.09-3.00)	-0.72	1.00
Other race	1.04 (0.56-1.94)	0.12	1.00
White	0.62 (0.41-0.95)	-2.18	0.62
Unknown ethnicity	1.52 (0.92-2.51)	1.63	1.00
Not Hispanic	0.77 (0.63-0.94)	-2.54	0.23
Male	1.12 (0.98-1.28)	1.71	1.00
Non-smoker	0.65 (0.52-0.82)	-3.68	0.005
Charlson score	1.20 (1.14-1.25)	7.75	<0.001
BMI	1.01 (1.01-1.02)	3.24	0.03

Table **S20**: **Ketorolac (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.04)	4.92	<0.001
On drug	1.05 (0.79-1.41)	0.36	1.00
African American	0.99 (0.38-2.62)	-0.02	1.00
Unknown race	1.54 (0.47-5.03)	0.71	1.00
Other race	1.68 (0.36-7.79)	0.66	1.00
White	0.53 (0.21-1.37)	-1.31	1.00
Unknown ethnicity	3.13 (0.63-15.53)	1.40	1.00
Not Hispanic	1.17 (0.56-2.44)	0.41	1.00
Male	1.13 (0.83-1.54)	0.79	1.00
Non-smoker	0.56 (0.33-0.94)	-2.18	0.62
Charlson score	1.28 (1.18-1.38)	6.09	<0.001
BMI	1.02 (1.00-1.04)	2.20	0.58

Table **S21**: **Meloxicam (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.05)	7.13	<0.001
On drug	1.03 (0.81-1.30)	0.25	1.00
African American	0.52 (0.26-1.03)	-1.88	1.00
Unknown race	0.34 (0.13-0.88)	-2.23	0.54
Other race	0.53 (0.11-2.57)	-0.79	1.00
White	0.29 (0.15-0.57)	-3.61	0.006
Unknown ethnicity	3.08 (1.12-8.43)	2.19	0.60
Not Hispanic	0.83 (0.39-1.76)	-0.47	1.00
Male	0.99 (0.76-1.29)	-0.06	1.00
Non-smoker	0.61 (0.43-0.88)	-2.69	0.15
Charlson score	1.23 (1.17-1.29)	7.97	<0.001
BMI	1.00 (0.98-1.01)	-0.39	1.00

Table **S22**: **Diclofenac (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.03)	7.95	<0.001
On drug	0.95 (0.79-1.14)	-0.57	1.00
African American	0.99 (0.58-1.66)	-0.05	1.00
Unknown race	0.51 (0.26-1.01)	-1.92	1.00
Pacific Islander	1.47 (0.16-13.55)	0.34	1.00
Other race	0.59 (0.15-2.36)	-0.74	1.00
White	0.52 (0.31-0.87)	-2.50	0.26
Unknown ethnicity	1.47 (0.72-3.01)	1.06	1.00
Not Hispanic	0.51 (0.32-0.82)	-2.77	0.12
Male	1.11 (0.91-1.36)	1.05	1.00
Non-smoker	0.67 (0.51-0.90)	-2.68	0.15
Charlson score	1.21 (1.16-1.26)	8.88	<0.001
BMI	1.00 (0.98-1.01)	-0.69	1.00

Table **S23**: **Diclofenac (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.06)	4.88	<0.001
On drug	1.43 (0.97-2.12)	1.81	1.00
African American	2.72 (0.24-30.85)	0.81	1.00
Unknown race	1.11 (0.08-15.80)	0.08	1.00
Pacific Islander	1.37 (0.03-55.75)	0.17	1.00
White	1.20 (0.11-13.06)	0.15	1.00
Unknown ethnicity	0.75 (0.16-3.55)	-0.37	1.00
Not Hispanic	0.89 (0.31-2.57)	-0.22	1.00
Male	1.15 (0.77-1.73)	0.68	1.00
Non-smoker	0.90 (0.40-2.03)	-0.26	1.00
Charlson score	1.28 (1.17-1.40)	5.35	<0.001
BMI	1.01 (0.99-1.04)	0.96	1.00

Table **S24**: **Celecoxib (Osteoarthritis)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.05)	4.70	<0.001
On drug	1.39 (0.99-1.94)	1.92	1.00
African American	0.78 (0.09-6.71)	-0.23	1.00
Unknown race	0.34 (0.04-3.33)	-0.92	1.00
Other race	0.36 (0.03-4.07)	-0.82	1.00
White	0.35 (0.04-2.89)	-0.98	1.00
Unknown ethnicity	1.90 (0.71-5.07)	1.27	1.00
Not Hispanic	0.43 (0.20-0.95)	-2.08	0.78
Male	1.09 (0.76-1.57)	0.47	1.00
Non-smoker	0.53 (0.30-0.96)	-2.11	0.73
Charlson score	1.26 (1.15-1.39)	4.88	<0.001
BMI	1.00 (0.98-1.03)	0.34	1.00

Table **S25**: **Celecoxib (Pain)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.08	0.02	4.67	<0.001	1.04-1.11
On drug	0.38	1.46	0.28	1.37	1.00	0.85-2.51
African American	0.54	0.58	0.82	-0.66	1.00	0.12-2.90
Unknown race	2.62	0.07	1.60	-1.64	1.00	0.00-1.67
Pacific Islander	15.40	0.00	5918.84	-0.00	1.00	0.00-inf
Other race	15.86	0.00	4631.93	-0.00	1.00	0.00-inf
White	0.27	0.76	0.78	-0.35	1.00	0.16-3.54
Unknown ethnicity	2.53	12.62	1.74	1.46	1.00	0.42-378.57
Not Hispanic	0.85	2.35	1.04	0.82	1.00	0.31-17.89
Male	0.41	1.51	0.29	1.39	1.00	0.85-2.68
Non-smoker	0.20	1.22	0.41	0.48	1.00	0.54-2.75
Charlson score	0.15	1.16	0.04	3.59	0.007	1.07-1.25
BMI	0.01	1.01	0.02	0.56	1.00	0.97-1.05

Table **S26**: **Aspirin (Angina pectoris)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.09	0.01	8.42	<0.001	1.07-1.11
On drug	0.64	1.90	0.20	3.25	0.02	1.29-2.80
African American	16.12	10067380.00	2065.42	0.01	1.00	0.00-inf
Unknown race	15.78	7097027.00	2065.42	0.01	1.00	0.00-inf
Pacific Islander	0.77	2.17	75358.36	0.00	1.00	0.00-inf
Other race	16.59	16084400.00	2065.42	0.01	1.00	0.00-inf
White	16.18	10614450.00	2065.42	0.01	1.00	0.00-inf
Unknown ethnicity	0.45	0.64	0.60	-0.75	1.00	0.19-2.08
Not Hispanic	0.23	0.79	0.41	-0.56	1.00	0.35-1.78
Male	0.66	1.93	0.21	3.18	0.03	1.29-2.91
Non-smoker	0.38	1.47	0.34	1.14	1.00	0.76-2.83
Charlson score	0.05	1.05	0.03	1.66	1.00	0.99-1.11
BMI	0.03	1.03	0.01	2.40	0.35	1.01-1.06

Table **S27**: **Aspirin (Fever)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.08	1.08	0.03	2.57	0.21	1.02-1.15
On drug	1.74	5.71	0.85	2.05	0.84	1.08-30.10
African American	15.73	6758044.00	16529.39	0.00	1.00	0.00-inf
Unknown race	16.02	9108901.00	16529.39	0.00	1.00	0.00-inf
Pacific Islander	2.81	0.06	39463.91	-0.00	1.00	0.00-inf
Other race	2.54	0.08	70118.44	-0.00	1.00	0.00-inf
White	16.46	14053050.00	16529.39	0.00	1.00	0.00-inf
Not Hispanic	1.96	0.14	1.62	-1.21	1.00	0.01-3.37
Male	0.80	2.24	0.72	1.12	1.00	0.54-9.19
Non-smoker	18.28	86796880.00	9605.03	0.00	1.00	0.00-inf
Charlson score	0.10	1.11	0.12	0.86	1.00	0.88-1.40
BMI	0.00	1.00	0.04	0.06	1.00	0.92-1.09

Table **S28**: **Aspirin (Migraine)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.06	1.06	0.01	6.81	<0.001	1.04-1.08
On drug	0.44	1.56	0.17	2.68	0.15	1.13-2.16
African American	0.88	2.42	1.02	0.87	1.00	0.33-17.78
Unknown race	1.24	3.45	1.06	1.17	1.00	0.43-27.69
Pacific Islander	11.58	0.00	1522.49	-0.01	1.00	0.00-inf
Other race	1.69	5.42	1.24	1.37	1.00	0.48-61.21
White	0.89	2.43	1.01	0.88	1.00	0.33-17.62
Unknown ethnicity	0.39	0.68	0.48	-0.81	1.00	0.26-1.75
Not Hispanic	0.14	0.87	0.34	-0.42	1.00	0.45-1.69
Male	0.37	1.45	0.18	2.06	0.82	1.02-2.06
Non-smoker	0.16	1.17	0.27	0.58	1.00	0.69-1.97
Charlson score	0.01	1.01	0.03	0.29	1.00	0.95-1.07
BMI	0.00	1.00	0.01	0.30	1.00	0.98-1.03

Table **S29**: **Aspirin (Myocardial infarction)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.05	1.05	0.01	6.22	<0.001	1.04-1.07
On drug	0.27	1.31	0.15	1.78	1.00	0.97-1.78
African American	0.26	0.77	0.60	-0.43	1.00	0.24-2.52
Unknown race	0.41	0.66	0.76	-0.54	1.00	0.15-2.92
Pacific Islander	13.80	0.00	1533.28	-0.01	1.00	0.00-inf
Other race	0.57	1.77	0.92	0.62	1.00	0.29-10.74
White	0.08	1.08	0.59	0.14	1.00	0.34-3.47
Unknown ethnicity	0.38	1.46	0.62	0.61	1.00	0.43-4.94
Not Hispanic	0.58	1.78	0.48	1.20	1.00	0.70-4.55
Male	0.29	1.33	0.15	1.86	1.00	0.98-1.81
Non-smoker	0.45	0.64	0.20	-2.22	0.55	0.43-0.95
Charlson score	0.11	1.12	0.02	5.06	<0.001	1.07-1.17
BMI	0.01	1.01	0.01	0.97	1.00	0.99-1.03

Table **S30**: **Aspirin (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.06	1.06	0.01	9.77	<0.001	1.05-1.07
On drug	0.77	2.15	0.13	5.87	<0.001	1.66-2.78
African American	0.36	0.70	0.36	-1.01	1.00	0.35-1.40
Unknown race	0.40	0.67	0.43	-0.94	1.00	0.29-1.55
Pacific Islander	13.72	0.00	1224.62	-0.01	1.00	0.00-inf
Other race	1.05	0.35	1.06	-0.98	1.00	0.04-2.82
White	0.28	0.76	0.34	-0.81	1.00	0.39-1.49
Unknown ethnicity	0.04	0.96	0.36	-0.10	1.00	0.47-1.97
Not Hispanic	0.13	0.87	0.26	-0.51	1.00	0.52-1.46
Male	0.45	1.58	0.13	3.62	0.006	1.23-2.02
Non-smoker	0.15	0.86	0.19	-0.80	1.00	0.59-1.25
Charlson score	0.10	1.11	0.02	5.47	<0.001	1.07-1.15
BMI	0.01	1.01	0.01	0.86	1.00	0.99-1.02

Table **S31**: **Aspirin (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.06	1.07	0.03	1.96	1.00	1.00-1.14
On drug	0.35	0.70	0.59	-0.60	1.00	0.22-2.22
African American	16.32	12253920.00	7425.16	0.00	1.00	0.00-inf
Unknown race	14.37	1749668.00	7425.16	0.00	1.00	0.00-inf
Other race	0.13	1.14	31881.41	0.00	1.00	0.00-inf
White	15.69	6530627.00	7425.16	0.00	1.00	0.00-inf
Unknown ethnicity	0.30	1.35	1.41	0.21	1.00	0.08-21.43
Not Hispanic	2.46	0.09	0.91	-2.70	0.14	0.01-0.51
Male	0.38	0.68	0.75	-0.51	1.00	0.16-2.97
Non-smoker	1.11	3.03	1.10	1.01	1.00	0.35-26.35
Charlson score	0.02	1.02	0.09	0.18	1.00	0.86-1.20
BMI	0.02	1.02	0.04	0.43	1.00	0.94-1.10

Table **S32**: **Aspirin (Rheumatoid arthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.08	0.01	5.68	<0.001	1.05-1.11
On drug	0.29	1.34	0.35	0.84	1.00	0.68-2.64
African American	17.40	36088580.00	4965.37	0.00	1.00	0.00-inf
Unknown race	16.99	23916050.00	4965.37	0.00	1.00	0.00-inf
Pacific Islander	0.37	1.45	51884.26	0.00	1.00	0.00-inf
Other race	0.01	1.01	10575.74	0.00	1.00	0.00-inf
White	17.75	51206330.00	4965.37	0.00	1.00	0.00-inf
Unknown ethnicity	0.21	0.81	0.82	-0.26	1.00	0.16-4.01
Not Hispanic	1.12	0.33	0.60	-1.85	1.00	0.10-1.07
Male	0.82	2.27	0.38	2.19	0.60	1.09-4.74
Non-smoker	0.33	1.39	0.61	0.54	1.00	0.42-4.63
Charlson score	0.21	1.23	0.05	3.86	0.002	1.11-1.37
BMI	0.02	0.98	0.03	-0.63	1.00	0.94-1.03

Table **S33**: **Ibuprofen (Fever)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.05	1.05	0.02	2.97	0.06	1.02-1.08
On drug	0.39	1.47	0.52	0.75	1.00	0.54-4.04
African American	16.41	13384980.00	5808.22	0.00	1.00	0.00-inf
Unknown race	13.38	649347.10	5808.22	0.00	1.00	0.00-inf
Other race	0.33	0.72	13749.40	-0.00	1.00	0.00-inf
White	16.61	16292190.00	5808.22	0.00	1.00	0.00-inf
Unknown ethnicity	1.90	6.69	1.69	1.12	1.00	0.24-184.25
Not Hispanic	0.89	0.41	0.86	-1.04	1.00	0.08-2.20
Male	0.13	0.88	0.55	-0.23	1.00	0.30-2.60
Non-smoker	0.25	0.78	0.67	-0.37	1.00	0.21-2.91
Charlson score	0.28	1.33	0.07	3.99	0.001	1.16-1.53
BMI	0.00	1.00	0.03	-0.06	1.00	0.94-1.06

Table **S34**: **Ibuprofen (Headache)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.07	1.07	0.02	4.15	<0.001	1.04-1.11
On drug	0.16	0.85	0.35	-0.46	1.00	0.43-1.68
African American	16.58	15856450.00	4194.68	0.00	1.00	0.00-inf
Unknown race	17.41	36575760.00	4194.68	0.00	1.00	0.00-inf
Other race	18.20	80005880.00	4194.68	0.00	1.00	0.00-inf
White	16.46	14068130.00	4194.68	0.00	1.00	0.00-inf
Unknown ethnicity	16.56	0.00	7431.74	-0.00	1.00	0.00-inf
Not Hispanic	0.80	2.23	0.99	0.81	1.00	0.32-15.47
Male	0.23	1.26	0.36	0.64	1.00	0.62-2.56
Non-smoker	0.13	0.88	0.62	-0.20	1.00	0.26-2.95
Charlson score	0.23	1.26	0.05	4.37	<0.001	1.13-1.39
BMI	0.02	1.02	0.02	0.74	1.00	0.97-1.06

Table **S35**: **Ibuprofen (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.08	0.01	8.36	<0.001	1.06-1.10
On drug	0.39	1.48	0.25	1.55	1.00	0.90-2.44
African American	0.67	0.51	0.57	-1.19	1.00	0.17-1.54
Unknown race	1.82	0.16	0.71	-2.58	0.21	0.04-0.65
Pacific Islander	17.49	0.00	8133.82	-0.00	1.00	0.00-inf
Other race	16.83	0.00	2804.53	-0.01	1.00	0.00-inf
White	0.91	0.40	0.55	-1.67	1.00	0.14-1.17
Unknown ethnicity	0.25	0.78	0.76	-0.33	1.00	0.18-3.43
Not Hispanic	1.44	0.24	0.43	-3.35	0.02	0.10-0.55
Male	0.91	2.48	0.26	3.50	0.010	1.49-4.12
Non-smoker	0.04	1.04	0.44	0.09	1.00	0.44-2.49
Charlson score	0.09	1.10	0.05	1.89	1.00	1.00-1.21
BMI	0.01	0.99	0.02	-0.47	1.00	0.96-1.03

Table **S36**: **Ibuprofen (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.09	1.09	0.02	4.23	<0.001	1.05-1.13
On drug	0.93	0.40	0.50	-1.87	1.00	0.15-1.05
African American	1.48	0.23	1.13	-1.32	1.00	0.02-2.07
Unknown race	1.39	0.25	1.29	-1.08	1.00	0.02-3.11
Pacific Islander	16.29	0.00	34713.93	-0.00	1.00	0.00-inf
Other race	0.01	1.01	1.62	0.01	1.00	0.04-24.26
White	0.84	0.43	1.09	-0.77	1.00	0.05-3.63
Unknown ethnicity	17.19	0.00	4311.45	-0.00	1.00	0.00-inf
Not Hispanic	1.40	0.25	0.64	-2.21	0.57	0.07-0.85
Male	1.35	3.86	0.50	2.70	0.15	1.45-10.31
Non-smoker	1.15	3.15	1.15	1.00	1.00	0.33-29.94
Charlson score	0.29	1.34	0.07	3.99	0.001	1.16-1.55
BMI	0.07	1.08	0.03	2.59	0.20	1.02-1.14

Table **S37**: **Naproxen (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.08	0.01	11.94	<0.001	1.07-1.09
On drug	0.52	1.68	0.12	4.30	<0.001	1.33-2.14
African American	0.08	1.08	0.52	0.16	1.00	0.39-2.99
Unknown race	0.40	0.67	0.57	-0.70	1.00	0.22-2.06
Pacific Islander	11.86	0.00	1322.32	-0.01	1.00	0.00-inf
Other race	0.31	1.36	0.73	0.42	1.00	0.33-5.67
White	0.21	1.23	0.51	0.41	1.00	0.45-3.33
Unknown ethnicity	0.17	0.84	0.33	-0.52	1.00	0.44-1.61
Not Hispanic	0.76	0.47	0.29	-2.63	0.18	0.27-0.82
Male	0.56	1.75	0.12	4.75	<0.001	1.39-2.20
Non-smoker	0.32	0.73	0.17	-1.87	1.00	0.52-1.02
Charlson score	0.13	1.14	0.02	7.86	<0.001	1.11-1.18
BMI	0.01	1.01	0.01	1.07	1.00	0.99-1.02

Table **S38**: **Acetaminophen (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.07	1.07	0.00	19.27	<0.001	1.06-1.08
On drug	0.52	1.69	0.08	6.32	<0.001	1.44-1.99
African American	0.36	1.44	0.30	1.19	1.00	0.79-2.61
Unknown race	0.18	1.20	0.34	0.53	1.00	0.62-2.32
Pacific Islander	12.30	0.00	614.43	-0.02	1.00	0.00-inf
Other race	0.42	0.65	0.65	-0.65	1.00	0.18-2.36
White	0.25	1.28	0.30	0.83	1.00	0.71-2.30
Unknown ethnicity	0.21	0.81	0.21	-0.98	1.00	0.53-1.23
Not Hispanic	0.32	0.73	0.17	-1.87	1.00	0.52-1.02
Male	0.46	1.58	0.08	5.64	<0.001	1.35-1.86
Non-smoker	0.19	0.83	0.13	-1.43	1.00	0.64-1.07
Charlson score	0.13	1.14	0.01	11.17	<0.001	1.12-1.17
BMI	0.01	1.01	0.01	2.53	0.24	1.00-1.02

Table **S39**: **Acetaminophen (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.09	1.09	0.02	3.76	0.004	1.04-1.15
On drug	0.61	1.83	0.43	1.42	1.00	0.79-4.23
African American	16.29	11915750.00	11560.05	0.00	1.00	0.00-inf
Unknown race	17.67	47380350.00	11560.05	0.00	1.00	0.00-inf
Other race	0.42	0.66	12733.53	-0.00	1.00	0.00-inf
White	16.40	13222450.00	11560.05	0.00	1.00	0.00-inf
Unknown ethnicity	0.45	0.64	1.21	-0.37	1.00	0.06-6.77
Not Hispanic	0.14	1.15	1.02	0.13	1.00	0.16-8.45
Male	0.43	1.53	0.47	0.90	1.00	0.61-3.86
Non-smoker	1.11	0.33	0.60	-1.86	1.00	0.10-1.06
Charlson score	0.09	0.91	0.10	-0.94	1.00	0.75-1.11
BMI	0.06	1.06	0.03	2.09	0.77	1.00-1.12

Table **S40**: **Acetaminophen (Rheumatoid arthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.09	1.10	0.02	6.19	<0.001	1.07-1.13
On drug	0.42	1.52	0.34	1.22	1.00	0.78-2.98
African American	0.49	0.61	1.06	-0.46	1.00	0.08-4.94
Unknown race	0.81	2.25	1.19	0.69	1.00	0.22-23.02
Pacific Islander	16.73	0.00	19618.20	-0.00	1.00	0.00-inf
Other race	15.40	0.00	5220.62	-0.00	1.00	0.00-inf
White	0.42	0.66	1.03	-0.41	1.00	0.09-4.96
Unknown ethnicity	16.02	0.00	4111.98	-0.00	1.00	0.00-inf
Not Hispanic	1.55	4.70	0.80	1.93	1.00	0.97-22.74
Male	0.67	1.95	0.34	1.97	1.00	1.00-3.78
Non-smoker	1.24	0.29	0.39	-3.21	0.03	0.14-0.62
Charlson score	0.13	1.14	0.06	2.23	0.54	1.02-1.27
BMI	0.01	0.99	0.02	-0.34	1.00	0.95-1.04

Table **S41**: **Ketorolac (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.07	1.07	0.03	2.24	0.52	1.01-1.13
On drug	0.18	0.83	0.59	-0.31	1.00	0.26-2.63
African American	2.65	0.07	1.26	-2.10	0.75	0.01-0.84
Unknown race	1.08	0.34	1.62	-0.67	1.00	0.01-8.18
Other race	17.11	0.00	23792.32	-0.00	1.00	0.00-inf
White	1.92	0.15	1.14	-1.68	1.00	0.02-1.38
Unknown ethnicity	19.47	286258000.00	5656.78	0.00	1.00	0.00-inf
Not Hispanic	17.46	38219070.00	5656.78	0.00	1.00	0.00-inf
Male	0.81	2.24	0.58	1.39	1.00	0.72-7.01
Non-smoker	0.84	0.43	1.09	-0.76	1.00	0.05-3.69
Charlson score	0.33	1.38	0.07	4.49	$<$0.001	1.20-1.60
BMI	0.02	0.98	0.05	-0.33	1.00	0.90-1.08

Table **S42**: **Meloxicam (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.10	1.11	0.02	5.18	<0.001	1.06-1.15
On drug	0.08	0.92	0.35	-0.23	1.00	0.47-1.82
African American	15.55	5682695.00	4621.81	0.00	1.00	0.00-inf
Unknown race	15.35	4638585.00	4621.81	0.00	1.00	0.00-inf
Pacific Islander	0.89	0.41	51037.84	-0.00	1.00	0.00-inf
Other race	0.80	0.45	20911.46	-0.00	1.00	0.00-inf
White	15.99	8769781.00	4621.81	0.00	1.00	0.00-inf
Unknown ethnicity	16.32	0.00	8469.14	-0.00	1.00	0.00-inf
Not Hispanic	0.53	1.70	1.53	0.35	1.00	0.08-34.16
Male	0.08	0.92	0.39	-0.20	1.00	0.43-1.99
Non-smoker	0.20	0.82	0.55	-0.36	1.00	0.28-2.42
Charlson score	0.26	1.29	0.05	5.53	<0.001	1.18-1.42
BMI	0.03	1.03	0.02	1.16	1.00	0.98-1.08

Table **S43**: **Diclofenac (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.09	1.09	0.02	5.69	<0.001	1.06-1.13
On drug	0.02	1.02	0.30	0.06	1.00	0.57-1.82
African American	0.22	0.80	1.04	-0.21	1.00	0.10-6.17
Unknown race	0.14	0.87	1.31	-0.10	1.00	0.07-11.30
Pacific Islander	16.33	0.00	12129.68	-0.00	1.00	0.00-inf
Other race	15.53	0.00	5182.22	-0.00	1.00	0.00-inf
White	0.24	0.79	1.03	-0.23	1.00	0.10-5.97
Unknown ethnicity	16.11	0.00	3393.03	-0.00	1.00	0.00-inf
Not Hispanic	0.14	1.16	0.84	0.17	1.00	0.22-5.98
Male	0.12	1.13	0.31	0.40	1.00	0.62-2.07
Non-smoker	0.26	0.77	0.45	-0.58	1.00	0.32-1.85
Charlson score	0.18	1.20	0.04	4.85	<0.001	1.12-1.29
BMI	0.03	1.03	0.02	1.37	1.00	0.99-1.07

Table **S44**: **Diclofenac (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.13	1.14	0.05	2.89	0.08	1.04-1.25
On drug	0.24	1.28	0.74	0.33	1.00	0.30-5.40
African American	19.57	316429400.00	52673.33	0.00	1.00	0.00-inf
Unknown race	19.64	337045900.00	52673.33	0.00	1.00	0.00-inf
Pacific Islander	1.26	0.28	93962.46	-0.00	1.00	0.00-inf
White	18.23	82827400.00	52673.33	0.00	1.00	0.00-inf
Unknown ethnicity	18.47	0.00	15036.75	-0.00	1.00	0.00-inf
Not Hispanic	0.39	1.48	3.43	0.11	1.00	0.00-1236.02
Male	0.47	1.60	0.75	0.63	1.00	0.37-6.96
Non-smoker	18.45	103329700.00	12688.83	0.00	1.00	0.00-inf
Charlson score	0.12	1.13	0.12	0.98	1.00	0.89-1.44
BMI	0.00	1.00	0.05	0.09	1.00	0.91-1.11

Table **S45**: **Celecoxib (Osteoarthritis)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Predictor	coef	exp(coef)	se(coef)	z	Pr(>|z|)	(2.5–97.5% CI)
Age	0.06	1.06	0.03	1.88	1.00	1.00-1.13
On drug	0.83	0.43	0.63	-1.32	1.00	0.13-1.50
African American	20.14	557589900.00	195494.30	0.00	1.00	0.00-inf
Unknown race	1.98	7.22	195910.10	0.00	1.00	0.00-inf
Other race	0.04	0.96	204304.80	-0.00	1.00	0.00-inf
White	19.21	219127600.00	195494.30	0.00	1.00	0.00-inf
Unknown ethnicity	0.02	1.02	31199.33	0.00	1.00	0.00-inf
Not Hispanic	18.04	68117330.00	15332.49	0.00	1.00	0.00-inf
Male	1.45	4.28	0.62	2.36	0.38	1.28-14.33
Non-smoker	18.95	169173000.00	10763.77	0.00	1.00	0.00-inf
Charlson score	0.30	1.35	0.11	2.58	0.20	1.07-1.69
BMI	0.03	0.97	0.05	-0.52	1.00	0.88-1.08

Table **S46**: **Celecoxib (Pain)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 21 tested medication/indication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.03-1.04)	20.51	<0.001
On drug	4.09 (3.72-4.50)	28.97	<0.001
African American	1.40 (1.02-1.93)	2.06	0.31
Unknown race	1.02 (0.71-1.47)	0.12	1.00
Pacific Islander	1.92 (0.71-5.16)	1.29	1.00
Other race	1.24 (0.71-2.15)	0.75	1.00
White	0.80 (0.58-1.09)	-1.42	1.00
Unknown ethnicity	1.08 (0.81-1.43)	0.50	1.00
Not Hispanic	0.57 (0.48-0.69)	-5.90	<0.001
Male	1.37 (1.25-1.51)	6.72	<0.001
Non-smoker	0.93 (0.80-1.08)	-0.98	1.00
Charlson score	1.10 (1.08-1.12)	9.34	<0.001
BMI	1.01 (1.00-1.01)	1.68	0.74

Table **S47**: **aspirin (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.02-1.03)	18.49	<0.001
On drug	4.03 (3.69-4.40)	31.25	<0.001
African American	1.33 (1.02-1.72)	2.11	0.28
Unknown race	0.96 (0.72-1.28)	-0.28	1.00
Pacific Islander	0.93 (0.36-2.43)	-0.15	1.00
Other race	0.82 (0.54-1.23)	-0.96	1.00
White	0.74 (0.57-0.96)	-2.25	0.20
Unknown ethnicity	0.90 (0.69-1.18)	-0.77	1.00
Not Hispanic	0.57 (0.49-0.66)	-7.50	<0.001
Male	1.29 (1.18-1.40)	5.78	<0.001
Non-smoker	0.75 (0.65-0.86)	-3.99	<0.001
Charlson score	1.13 (1.09-1.16)	7.01	<0.001
BMI	1.00 (1.00-1.01)	1.85	0.51

Table **S48**: **ibuprofen (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.02-1.03)	18.05	<0.001
On drug	3.99 (3.65-4.35)	31.08	<0.001
African American	1.11 (0.85-1.45)	0.77	1.00
Unknown race	0.79 (0.59-1.06)	-1.59	0.90
Pacific Islander	0.62 (0.23-1.66)	-0.96	1.00
Other race	0.76 (0.51-1.13)	-1.35	1.00
White	0.64 (0.49-0.83)	-3.31	0.007
Unknown ethnicity	1.02 (0.78-1.33)	0.13	1.00
Not Hispanic	0.56 (0.49-0.65)	-7.79	<0.001
Male	1.30 (1.19-1.41)	5.96	<0.001
Non-smoker	0.80 (0.69-0.92)	-3.08	0.02
Charlson score	1.12 (1.09-1.16)	6.86	<0.001
BMI	1.01 (1.00-1.01)	1.91	0.45

Table **S49**: **naproxen (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.03-1.03)	43.52	<0.001
On drug	9.16 (8.72-9.63)	88.16	<0.001
African American	1.15 (1.00-1.31)	1.96	0.40
Unknown race	0.75 (0.65-0.87)	-3.75	0.001
Pacific Islander	1.32 (0.84-2.08)	1.22	1.00
Other race	0.84 (0.67-1.06)	-1.48	1.00
White	0.62 (0.54-0.71)	-7.09	<0.001
Unknown ethnicity	1.06 (0.95-1.18)	0.99	1.00
Not Hispanic	0.58 (0.53-0.63)	-13.60	<0.001
Male	1.33 (1.27-1.39)	12.35	<0.001
Non-smoker	0.80 (0.74-0.88)	-5.06	<0.001
Charlson score	1.13 (1.12-1.15)	18.43	<0.001
BMI	1.01 (1.00-1.01)	4.02	<0.001

Table **S50**: **acetaminophen (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.02 (1.02-1.02)	11.93	<0.001
On drug	6.42 (5.70-7.22)	30.79	<0.001
African American	0.86 (0.62-1.21)	-0.85	1.00
Unknown race	0.73 (0.50-1.06)	-1.68	0.75
Pacific Islander	0.88 (0.13-6.08)	-0.13	1.00
Other race	0.68 (0.40-1.16)	-1.42	1.00
White	0.49 (0.35-0.68)	-4.22	<0.001
Unknown ethnicity	1.11 (0.71-1.73)	0.45	1.00
Not Hispanic	0.69 (0.57-0.82)	-4.11	<0.001
Male	1.27 (1.14-1.43)	4.18	<0.001
Non-smoker	0.66 (0.54-0.82)	-3.83	0.001
Charlson score	1.15 (1.10-1.20)	6.02	<0.001
BMI	1.01 (1.01-1.02)	3.31	0.008

Table **S51**: **ketorolac (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.02-1.03)	7.25	<0.001
On drug	0.75 (0.61-0.93)	-2.70	0.06
African American	0.80 (0.41-1.56)	-0.65	1.00
Unknown race	0.64 (0.29-1.41)	-1.11	1.00
Pacific Islander	0.97 (0.17-5.48)	-0.04	1.00
Other race	0.76 (0.30-1.97)	-0.56	1.00
White	0.37 (0.19-0.71)	-2.99	0.02
Unknown ethnicity	1.12 (0.56-2.25)	0.32	1.00
Not Hispanic	0.66 (0.42-1.02)	-1.88	0.48
Male	1.34 (1.08-1.65)	2.65	0.07
Non-smoker	0.44 (0.30-0.64)	-4.32	<0.001
Charlson score	1.26 (1.18-1.35)	6.75	<0.001
BMI	1.01 (1.00-1.02)	1.58	0.92

Table **S52**: **meloxicam (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.03 (1.03-1.04)	10.27	<0.001
On drug	0.96 (0.80-1.16)	-0.39	1.00
African American	0.83 (0.50-1.38)	-0.70	1.00
Unknown race	0.59 (0.30-1.14)	-1.58	0.91
Pacific Islander	0.72 (0.10-5.25)	-0.32	1.00
Other race	1.14 (0.22-5.85)	0.16	1.00
White	0.40 (0.25-0.67)	-3.56	0.003
Unknown ethnicity	0.88 (0.39-2.01)	-0.30	1.00
Not Hispanic	0.64 (0.39-1.02)	-1.86	0.50
Male	1.30 (1.07-1.58)	2.65	0.06
Non-smoker	0.69 (0.51-0.92)	-2.48	0.11
Charlson score	1.15 (1.10-1.20)	6.28	<0.001
BMI	1.01 (1.00-1.02)	1.69	0.74

Table **S53**: **diclofenac (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Covariate	Odds Ratio (2.5–97.5% CI)	t-value	p-value
Age	1.04 (1.03-1.05)	5.90	<0.001
On drug	1.43 (1.05-1.96)	2.24	0.20
African American	1.14 (0.29-4.47)	0.19	1.00
Unknown race	0.40 (0.08-1.89)	-1.16	1.00
Pacific Islander	0.40 (0.02-8.79)	-0.58	1.00
Other race	0.95 (0.15-6.03)	-0.05	1.00
White	0.41 (0.11-1.55)	-1.31	1.00
Unknown ethnicity	2.28 (0.77-6.74)	1.49	1.00
Not Hispanic	0.68 (0.30-1.54)	-0.93	1.00
Male	1.27 (0.91-1.77)	1.41	1.00
Non-smoker	0.68 (0.38-1.22)	-1.30	1.00
Charlson score	1.16 (1.07-1.25)	3.69	0.002
BMI	1.01 (0.99-1.03)	0.76	1.00

Table **S54**: **celecoxib (entire subcohort)**. Ordinal logistic regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.06	1.07	0.01	12.51	<0.001	1.06-1.08
On drug	0.48	1.61	0.11	4.48	<0.001	1.31-1.99
African American	0.63	1.87	0.47	1.34	1.00	0.75-4.66
Unknown race	0.24	1.27	0.51	0.47	1.00	0.47-3.47
Pacific Islander	12.18	0.00	951.06	-0.01	1.00	0.00-inf
Other race	0.58	1.78	0.84	0.69	1.00	0.34-9.33
White	0.48	1.62	0.46	1.04	1.00	0.66-3.98
Unknown ethnicity	0.10	1.11	0.30	0.34	1.00	0.62-1.99
Not Hispanic	0.37	0.69	0.22	-1.65	0.80	0.45-1.07
Male	0.48	1.61	0.11	4.40	<0.001	1.30-1.99
Non-smoker	0.03	0.97	0.17	-0.16	1.00	0.70-1.36
Charlson score	0.09	1.09	0.02	5.46	<0.001	1.06-1.13
BMI	0.01	1.01	0.01	1.50	1.00	1.00-1.03

Table **S55**: **aspirin (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 4921.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.07	1.08	0.01	10.16	<0.001	1.06-1.09
On drug	0.09	0.91	0.20	-0.45	1.00	0.62-1.35
African American	0.06	1.06	0.61	0.10	1.00	0.32-3.51
Unknown race	0.42	1.52	0.70	0.60	1.00	0.38-6.02
Pacific Islander	12.91	0.00	1758.36	-0.01	1.00	0.00-inf
Other race	0.08	1.08	1.19	0.07	1.00	0.10-11.24
White	0.27	0.77	0.60	-0.44	1.00	0.23-2.51
Unknown ethnicity	0.11	0.90	0.62	-0.18	1.00	0.27-3.01
Not Hispanic	0.02	0.98	0.39	-0.05	1.00	0.46-2.12
Male	0.75	2.12	0.21	3.66	0.002	1.42-3.16
Non-smoker	0.03	0.97	0.38	-0.07	1.00	0.47-2.03
Charlson score	0.09	1.09	0.05	1.86	0.50	1.00-1.19
BMI	0.01	1.01	0.01	0.48	1.00	0.98-1.04

Table **S56**: **ibuprofen (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 5737.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.08	1.08	0.02	3.88	<0.001	1.04-1.13
On drug	0.44	0.64	0.50	-0.89	1.00	0.24-1.71
African American	16.24	11299020.00	7936.72	0.00	1.00	0.00-inf
Unknown race	16.01	8999436.00	7936.72	0.00	1.00	0.00-inf
Pacific Islander	2.66	14.29	37651.47	0.00	1.00	0.00-inf
Other race	0.67	0.51	10435.49	-0.00	1.00	0.00-inf
White	15.92	8177486.00	7936.72	0.00	1.00	0.00-inf
Unknown ethnicity	0.68	1.97	1.29	0.53	1.00	0.16-24.48
Not Hispanic	0.08	1.08	1.03	0.07	1.00	0.14-8.18
Male	0.55	1.74	0.49	1.12	1.00	0.66-4.55
Non-smoker	0.28	0.75	0.78	-0.37	1.00	0.16-3.44
Charlson score	0.22	1.25	0.07	3.35	0.006	1.10-1.42
BMI	0.02	1.02	0.03	0.55	1.00	0.96-1.08

Table **S57**: **naproxen (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 1579.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.07	1.07	0.00	23.73	<0.001	1.07-1.08
On drug	0.48	1.61	0.07	6.86	<0.001	1.40-1.84
African American	0.01	0.99	0.22	-0.07	1.00	0.64-1.51
Unknown race	0.20	0.81	0.25	-0.83	1.00	0.50-1.32
Pacific Islander	0.71	0.49	1.02	-0.69	1.00	0.07-3.66
Other race	0.14	0.87	0.46	-0.29	1.00	0.35-2.16
White	0.23	0.79	0.21	-1.11	1.00	0.52-1.20
Unknown ethnicity	0.33	0.72	0.18	-1.83	0.54	0.51-1.02
Not Hispanic	0.44	0.64	0.14	-3.24	0.009	0.49-0.84
Male	0.59	1.81	0.07	8.38	<0.001	1.58-2.08
Non-smoker	0.05	0.95	0.13	-0.36	1.00	0.74-1.23
Charlson score	0.11	1.12	0.01	9.62	<0.001	1.10-1.15
BMI	0.01	1.01	0.00	2.96	0.02	1.00-1.02

Table **S58**: **acetaminophen (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 20826.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr($>$ |z|)**	**(2.5–97.5% CI)**
Age	0.09	1.09	0.01	8.32	$<$0.001	1.07-1.11
On drug	0.17	0.85	0.24	-0.69	1.00	0.52-1.37
African American	0.53	1.71	1.03	0.52	1.00	0.23-12.94
Unknown race	0.39	1.48	1.13	0.35	1.00	0.16-13.42
Pacific Islander	13.32	0.00	12935.27	-0.00	1.00	0.00-inf
Other race	14.85	0.00	2016.08	-0.01	1.00	0.00-inf
White	0.44	1.55	1.02	0.43	1.00	0.21-11.40
Unknown ethnicity	0.19	0.82	0.79	-0.25	1.00	0.18-3.84
Not Hispanic	0.36	0.70	0.46	-0.78	1.00	0.28-1.73
Male	0.80	2.23	0.24	3.28	0.008	1.38-3.60
Non-smoker	0.34	0.71	0.38	-0.89	1.00	0.34-1.50
Charlson score	0.14	1.15	0.04	3.17	0.01	1.05-1.26
BMI	0.01	1.01	0.02	0.58	1.00	0.98-1.04

Table **S59**: **ketorolac (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 3331.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.05	1.06	0.02	3.34	0.007	1.02-1.09
On drug	0.83	0.44	0.40	-2.08	0.30	0.20-0.95
African American	0.53	1.71	1.17	0.46	1.00	0.17-17.02
Unknown race	1.04	2.83	1.41	0.74	1.00	0.18-44.71
Other race	14.75	0.00	4699.16	-0.00	1.00	0.00-inf
White	1.14	3.13	1.15	1.00	1.00	0.33-29.67
Unknown ethnicity	0.67	0.51	1.16	-0.58	1.00	0.05-4.92
Not Hispanic	1.20	0.30	0.68	-1.76	0.62	0.08-1.14
Male	0.22	1.25	0.38	0.59	1.00	0.59-2.63
Non-smoker	0.24	1.27	0.77	0.32	1.00	0.28-5.73
Charlson score	0.26	1.30	0.06	4.35	$<$0.001	1.16-1.47
BMI	0.03	1.03	0.03	0.99	1.00	0.98-1.08

Table **S60**: **meloxicam (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 1172.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.10	1.10	0.01	6.75	<0.001	1.07-1.13
On drug	0.42	0.66	0.28	-1.49	1.00	0.38-1.14
African American	0.85	0.43	0.82	-1.03	1.00	0.09-2.14
Unknown race	0.22	1.25	1.06	0.21	1.00	0.16-9.92
Pacific Islander	16.75	0.00	10111.99	-0.00	1.00	0.00-inf
Other race	15.82	0.00	12915.74	-0.00	1.00	0.00-inf
White	0.48	0.62	0.79	-0.61	1.00	0.13-2.90
Unknown ethnicity	16.48	0.00	3727.18	-0.00	1.00	0.00-inf
Not Hispanic	0.17	1.19	0.81	0.21	1.00	0.24-5.82
Male	0.04	0.96	0.30	-0.13	1.00	0.54-1.72
Non-smoker	0.45	1.56	0.56	0.80	1.00	0.53-4.64
Charlson score	0.14	1.15	0.04	3.16	0.01	1.05-1.25
BMI	0.04	1.04	0.02	1.73	0.67	1.00-1.08

Table **S61**: **diclofenac (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 1367.

Predictor	**coef**	**exp(coef)**	**se(coef)**	**z**	**Pr(>|z|)**	**(2.5–97.5% CI)**
Age	0.10	1.11	0.04	2.58	0.08	1.02-1.20
On drug	1.04	0.35	0.71	-1.47	1.00	0.09-1.42
African American	0.44	0.65	1.34	-0.33	1.00	0.05-8.86
Unknown race	1.54	0.21	2.08	-0.74	1.00	0.00-12.60
Pacific Islander	22.94	0.00	116630.60	-0.00	1.00	0.00-inf
Other race	17.07	0.00	44094.66	-0.00	1.00	0.00-inf
White	2.60	0.07	1.29	-2.02	0.34	0.01-0.92
Unknown ethnicity	19.57	314859200.00	10666.63	0.00	1.00	0.00-inf
Not Hispanic	17.76	51902670.00	10666.63	0.00	1.00	0.00-inf
Male	2.12	8.35	0.82	2.60	0.08	1.68-41.48
Non-smoker	17.27	31799360.00	7693.96	0.00	1.00	0.00-inf
Charlson score	0.17	0.84	0.21	-0.82	1.00	0.56-1.27
BMI	0.06	0.94	0.05	-1.20	1.00	0.85-1.04

Table **S62**: **celecoxib (entire subcohort)**. Multivariate Cox regression analysis. A Bonferroni correction was used to account for the 8 tested medication subcohorts. Cohort size: 460.