Development and Validation of a Risk Prediction Model of linezolid-induced thrombocytopenia in Vietnamese patients

Friday, March 8, 2024

Objectives

1. Investigating risk factors of linezolid-induced thrombocytopenia (LI-TP)
2. Developing and validating a logistics regression model to predict LI-TP in Vietnamese patients

Data cleaning

Source: Article Notebook

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Source: Article Notebook

Descriptive statistics

Source: Article Notebook

Characteristic	**Overall**, N = 817	**FALSE**, N = 553	**TRUE**, N = 264	**OR**	**95% CI**	**p-value**
patient_age	62 (50 - 73)	61 (47 - 72)	64 (54 - 74)	1.02	1.01, 1.03	**<0.001**
patient_sex	307 (38%)	207 (37%)	100 (38%)	1.02	0.75, 1.38	>0.9
LZD_dose_per_weight	21.8 (20.0 - 24.0)	21.8 (20.0 - 24.0)	21.8 (19.4 - 24.6)	0.99	0.96, 1.03	0.8
baseline_CLCR	48 (21 - 83)	55 (26 - 88)	32 (15 - 64)	0.99	0.99, 0.99	**<0.001**
dept_ER	140 (17%)	95 (17%)	45 (17%)	0.99	0.67, 1.45	>0.9
dept_ICU	391 (48%)	241 (44%)	150 (57%)	1.70	1.27, 2.29	**<0.001**
baseline_HGB	102 (89 - 120)	105 (91 - 121)	98 (85 - 117)	0.99	0.98, 0.99	**<0.001**
baseline_WBC	12 (8 - 17)	12 (8 - 17)	12 (8 - 18)	1.01	0.99, 1.03	0.4
baseline_PLT	206 (142 - 288)	234 (167 - 309)	154 (103 - 211)	0.99	0.99, 0.99	**<0.001**
LZD_duration	9.0 (6.0 - 14.0)	9.0 (6.0 - 13.0)	10.0 (6.0 - 14.0)	1.03	1.01, 1.06	**0.018**
invasive_ETI	387 (47%)	231 (42%)	156 (59%)	2.01	1.50, 2.72	**<0.001**
invasive_CVC	424 (52%)	247 (45%)	177 (67%)	2.52	1.86, 3.43	**<0.001**
invasive_IHD	111 (14%)	64 (12%)	47 (18%)	1.65	1.10, 2.49	**0.016**
invasive_CRRT	148 (18%)	65 (12%)	83 (31%)	3.44	2.39, 4.98	**<0.001**
comorb_HTN	333 (41%)	218 (39%)	115 (44%)	1.19	0.88, 1.60	0.3

Characteristic	**Overall**, N = 817	**FALSE**, N = 553	**TRUE**, N = 264	**OR**	**95% CI**	**p-value**
comorb_DM	222 (27%)	150 (27%)	72 (27%)	1.01	0.72, 1.40	>0.9
comorb_HF	226 (28%)	132 (24%)	94 (36%)	1.76	1.28, 2.42	**<0.001**
comorb_angina	32 (3.9%)	19 (3.4%)	13 (4.9%)	1.46	0.69, 2.97	0.3
comorb_cirr	48 (5.9%)	20 (3.6%)	28 (11%)	3.16	1.75, 5.80	**<0.001**
comorb_COPD	39 (4.8%)	25 (4.5%)	14 (5.3%)	1.18	0.59, 2.28	0.6
comorb_CVA	93 (11%)	64 (12%)	29 (11%)	0.94	0.58, 1.49	0.8
comorb_MI	20 (2.4%)	15 (2.7%)	5 (1.9%)	0.69	0.22, 1.81	0.5
comorb_K	67 (8.2%)	44 (8.0%)	23 (8.7%)	1.10	0.64, 1.85	0.7
comorb_hematological	46 (5.6%)	27 (4.9%)	19 (7.2%)	1.51	0.81, 2.75	0.2
comorb_hema	61 (7.5%)	37 (6.7%)	24 (9.1%)	1.39	0.81, 2.37	0.2
infect_sepsis	134 (16%)	66 (12%)	68 (26%)	2.56	1.76, 3.74	**<0.001**
infect_CAP	118 (14%)	70 (13%)	48 (18%)	1.53	1.02, 2.28	**0.037**
infect_HAP	375 (46%)	255 (46%)	120 (45%)	0.97	0.73, 1.31	0.9
infect_SSTI	133 (16%)	100 (18%)	33 (13%)	0.65	0.42, 0.98	**0.044**
infect_CNS	68 (8.3%)	46 (8.3%)	22 (8.3%)	1.00	0.58, 1.68	>0.9
infect_IAI	50 (6.1%)	34 (6.1%)	16 (6.1%)	0.98	0.52, 1.79	>0.9
infect_UTI	53 (6.5%)	37 (6.7%)	16 (6.1%)	0.90	0.48, 1.62	0.7
infect_BJI	11 (1.3%)	10 (1.8%)	1 (0.4%)	0.21	0.01, 1.09	0.13
infect_septicemia	237 (29%)	148 (27%)	89 (34%)	1.39	1.01, 1.91	**0.041**
comed_aspirin	47 (5.8%)	30 (5.4%)	17 (6.4%)	1.20	0.64, 2.19	0.6

Characteristic	Overall, N = 817	FALSE, N = 553	TRUE, N = 264	OR	95% CI	p-value
comed_diclofenac	27 (3.3%)	20 (3.6%)	7 (2.7%)	0.73	0.28, 1.66	0.5
comed_ibuprofen	26 (3.2%)	15 (2.7%)	11 (4.2%)	1.56	0.69, 3.42	0.3
comed_paracetamol	355 (43%)	244 (44%)	111 (42%)	0.92	0.68, 1.23	0.6
comed_penicillin	123 (15%)	78 (14%)	45 (17%)	1.25	0.83, 1.86	0.3
comed_cepha	207 (25%)	149 (27%)	58 (22%)	0.76	0.54, 1.08	0.13
comed_carbapenem	584 (71%)	382 (69%)	202 (77%)	1.46	1.05, 2.05	**0.028**
comed_cotrimoxazol	65 (8.0%)	37 (6.7%)	28 (11%)	1.65	0.98, 2.76	0.055
comed_vancomycin	68 (8.3%)	42 (7.6%)	26 (9.8%)	1.33	0.79, 2.21	0.3
comed_levofloxacin	250 (31%)	161 (29%)	89 (34%)	1.24	0.90, 1.69	0.2
comed_teicoplanin	37 (4.5%)	23 (4.2%)	14 (5.3%)	1.29	0.64, 2.52	0.5
comed_ethambutol	8 (1.0%)	5 (0.9%)	3 (1.1%)	1.26	0.26, 5.17	0.8
comed_pyrazinamid	12 (1.5%)	6 (1.1%)	6 (2.3%)	2.12	0.66, 6.84	0.2
comed_rifampin	17 (2.1%)	10 (1.8%)	7 (2.7%)	1.48	0.53, 3.89	0.4
comed_heparin	207 (25%)	108 (20%)	99 (38%)	2.47	1.78, 3.43	**<0.001**
comed_clopidogrel	40 (4.9%)	30 (5.4%)	10 (3.8%)	0.69	0.31, 1.38	0.3
comed_enoxaparin	350 (43%)	233 (42%)	117 (44%)	1.09	0.81, 1.47	0.6
comed_dexamethason	105 (13%)	71 (13%)	34 (13%)	1.00	0.64, 1.54	>0.9
comed_amiodaron	36 (4.4%)	17 (3.1%)	19 (7.2%)	2.45	1.25, 4.83	**0.009**
comed_furosemid	436 (53%)	260 (47%)	176 (67%)	2.25	1.66, 3.07	**<0.001**
comed_haloperidol	52 (6.4%)	35 (6.3%)	17 (6.4%)	1.02	0.55, 1.83	>0.9

Characteristic	Overall, N = 817	FALSE, N = 553	TRUE, N = 264	OR	95% CI	p-value
comed_valproic	32 (3.9%)	23 (4.2%)	9 (3.4%)	0.81	0.35, 1.73	0.6
comed_aceclofenac	0 (0%)	0 (0%)	0 (0%)			
comed_naproxen	0 (0%)	0 (0%)	0 (0%)			
comed_daptomycin	1 (0.1%)	0 (0%)	1 (0.4%)			
comed_cetirizin	6 (0.7%)	5 (0.9%)	1 (0.4%)			
comed_simvas	0 (0%)	0 (0%)	0 (0%)			
comed_bisoprolol	6 (0.7%)	4 (0.7%)	2 (0.8%)			
comed_diltiazem	0 (0%)	0 (0%)	0 (0%)			
comed_eptifibatid	0 (0%)	0 (0%)	0 (0%)			
comed_quinidin	0 (0%)	0 (0%)	0 (0%)			
comed_carbamazepin	8 (1.0%)	8 (1.4%)	0 (0%)			
comed_phenytoin	0 (0%)	0 (0%)	0 (0%)			
comed_mirtazapin	0 (0%)	0 (0%)	0 (0%)			
comed_quetiapin	4 (0.5%)	4 (0.7%)	0 (0%)			
comed_ondansetron	6 (0.7%)	4 (0.7%)	2 (0.8%)			
comed_palonosetron	0 (0%)	0 (0%)	0 (0%)			
comed_oseltamivir	3 (0.4%)	1 (0.2%)	2 (0.8%)			
comed_quinin	0 (0%)	0 (0%)	0 (0%)			
comed_pembrolizumab	0 (0%)	0 (0%)	0 (0%)			
comed_trastuzumab	0 (0%)	0 (0%)	0 (0%)			
comed_atezolizumab	0 (0%)	0 (0%)	0 (0%)			
comed_durvalumab	0 (0%)	0 (0%)	0 (0%)			
comed_IVIG	0 (0%)	0 (0%)	0 (0%)			
comed_tacrolimus	1 (0.1%)	0 (0%)	1 (0.4%)			
comed_fluorouracil	0 (0%)	0 (0%)	0 (0%)			
comed_irinotecan	0 (0%)	0 (0%)	0 (0%)			
comed_leucovorin	0 (0%)	0 (0%)	0 (0%)			
comed_oxaliplatin	0 (0%)	0 (0%)	0 (0%)			

Source: Article Notebook

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Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
patient_age	62 (50 - 73)	58 (43 - 69)	60 (45 - 72)	60 (45 - 68)	59 (46 - 68)	69 (60 - 78)	66 (58 - 78)	**<0.001**

Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
patient__sex	307 (38%)	54 (43%)	27 (35%)	74 (41%)	28 (24%)	48 (48%)	76 (35%)	**0.004**
LZD__dose_per_weight	21.8 (20.0 - 24.0)	22.6 (20.0 - 25.5)	21.4 (19.0 - 24.0)	21.4 (19.4 - 24.0)	21.8 (20.0 - 24.0)	24.0 (20.0 - 24.6)	21.8 (19.7 - 24.0)	**0.027**
baseline__CLCR	46 (21 - 83)	50 (24 - 80)	40 (17 - 86)	70 (41 - 104)	60 (27 - 95)	29 (14 - 54)	35 (17 - 67)	**<0.001**
dept__ER	140 (17%)	7 (5.6%)	9 (12%)	67 (37%)	15 (13%)	16 (16%)	26 (12%)	**<0.001**
dept__ICU	391 (48%)	10 (8.0%)	23 (30%)	74 (41%)	42 (36%)	77 (77%)	165 (75%)	**<0.001**
baseline__HGB	109 (89 - 120)	105 (91 - 124)	99 (83 - 118)	105 (89 - 122)	100 (88 - 118)	99 (89 - 116)	104 (91 - 120)	0.2
baseline__WBC	12 (8 - 17)	11 (7 - 16)	11 (7 - 17)	12 (8 - 18)	11 (7 - 15)	12 (8 - 18)	13 (9 - 18)	**0.024**
baseline__PLT	206 (142 - 288)	195 (139 - 247)	234 (160 - 318)	207 (129 - 292)	225 (127 - 310)	172 (122 - 245)	225 (161 - 299)	**<0.001**
LZD__duration	10 (6.0 - 14.0)	8.0 (6.0 - 13.0)	10.0 (6.0 - 14.0)	10.0 (6.0 - 14.0)	9.0 (6.0 - 12.0)	11.0 (6.0 - 15.0)	9.0 (6.0 - 12.0)	0.3
invasive__ETI	387 (47%)	63 (50%)	30 (39%)	112 (62%)	49 (42%)	48 (48%)	85 (39%)	**<0.001**
invasive__CVC	424 (52%)	75 (60%)	30 (39%)	100 (56%)	48 (41%)	50 (50%)	121 (55%)	**0.008**
invasive__IHD	111 (14%)	17 (14%)	16 (21%)	9 (5.0%)	0 (0%)	27 (27%)	42 (19%)	**<0.001**
invasive__CRRT	148 (18%)	17 (14%)	9 (12%)	53 (29%)	5 (4.3%)	20 (20%)	44 (20%)	**<0.001**
comorb__HTN	333 (41%)	42 (34%)	31 (40%)	49 (27%)	28 (24%)	59 (59%)	124 (57%)	**<0.001**
comorb__DM	222 (27%)	28 (22%)	24 (31%)	28 (16%)	27 (23%)	31 (31%)	84 (38%)	**<0.001**
comorb__HF	226 (28%)	55 (44%)	11 (14%)	15 (8.3%)	7 (6.0%)	70 (70%)	68 (31%)	**<0.001**
comorb__angina	32 (3.9%)	0 (0%)	0 (0%)	1 (0.6%)	0 (0%)	13 (13%)	18 (8.2%)	**<0.001**
comorb__cirr	48 (5.9%)	6 (4.8%)	1 (1.3%)	10 (5.6%)	5 (4.3%)	12 (12%)	14 (6.4%)	0.080

Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
comorb_COPD	39 (4.8%)	3 (2.4%)	0 (0%)	2 (1.1%)	2 (1.7%)	9 (9.0%)	23 (11%)	**<0.001**
comorb_CVA	93 (11%)	19 (15%)	11 (14%)	6 (3.3%)	4 (3.4%)	16 (16%)	37 (17%)	**<0.001**
comorb_MI	20 (2.4%)	10 (8.0%)	3 (3.9%)	2 (1.1%)	0 (0%)	1 (1.0%)	4 (1.8%)	**0.002**
comorb_K	67 (8.2%)	5 (4.0%)	5 (6.5%)	8 (4.4%)	6 (5.2%)	11 (11%)	32 (15%)	**<0.001**
comorb_hematological	46 (5.6%)	9 (7.2%)	12 (16%)	10 (5.6%)	5 (4.3%)	8 (8.0%)	2 (0.9%)	**<0.001**
comorb_hema	61 (7.5%)	13 (10%)	17 (22%)	14 (7.8%)	2 (1.7%)	13 (13%)	2 (0.9%)	**<0.001**
infect_sepsis	134 (16%)	10 (8.0%)	14 (18%)	16 (8.9%)	15 (13%)	44 (44%)	35 (16%)	**<0.001**
infect_CAP	118 (14%)	7 (5.6%)	6 (7.8%)	11 (6.1%)	1 (0.9%)	26 (26%)	67 (31%)	**<0.001**
infect_HAP	375 (46%)	38 (30%)	33 (43%)	93 (52%)	59 (51%)	52 (52%)	100 (46%)	**0.004**
infect_SSTI	133 (16%)	33 (26%)	34 (44%)	1 (0.6%)	4 (3.4%)	23 (23%)	38 (17%)	**<0.001**
infect_CNS	68 (8.3%)	0 (0%)	5 (6.5%)	24 (13%)	20 (17%)	4 (4.0%)	15 (6.8%)	**<0.001**
infect_IAI	50 (6.1%)	8 (6.4%)	8 (10%)	1 (0.6%)	2 (1.7%)	12 (12%)	19 (8.7%)	**<0.001**
infect_UTI	53 (6.5%)	6 (4.8%)	8 (10%)	10 (5.6%)	5 (4.3%)	4 (4.0%)	20 (9.1%)	0.3
infect_BJI	11 (1.3%)	3 (2.4%)	0 (0%)	0 (0%)	2 (1.7%)	1 (1.0%)	5 (2.3%)	0.2
infect_septicemia	237 (29%)	35 (28%)	24 (31%)	57 (32%)	60 (52%)	7 (7.0%)	54 (25%)	**<0.001**
comed_aspirin	47 (5.8%)	8 (6.4%)	9 (12%)	3 (1.7%)	0 (0%)	5 (5.0%)	22 (10%)	**<0.001**
comed_diclofenac	27 (3.3%)	24 (19%)	0 (0%)	0 (0%)	1 (0.9%)	0 (0%)	2 (0.9%)	**<0.001**
comed_ibuprofen	26 (3.2%)	0 (0%)	0 (0%)	0 (0%)	2 (1.7%)	0 (0%)	24 (11%)	**<0.001**
comed_paracetamol	355 (43%)	66 (53%)	0 (0%)	90 (50%)	69 (59%)	47 (47%)	83 (38%)	**<0.001**

Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
comed_penicillin	123 (15%)	0 (0%)	5 (6.5%)	34 (19%)	19 (16%)	17 (17%)	48 (22%)	**<0.001**
comed_cepha	207 (25%)	12 (9.6%)	10 (13%)	35 (19%)	33 (28%)	11 (11%)	106 (48%)	**<0.001**
comed_carbapenem	584 (71%)	52 (42%)	46 (60%)	154 (86%)	78 (67%)	80 (80%)	174 (79%)	**<0.001**
comed_cotrimoxazol	65 (8.0%)	0 (0%)	5 (6.5%)	18 (10%)	14 (12%)	9 (9.0%)	19 (8.7%)	**0.010**
comed_vancomycin	68 (8.3%)	8 (6.4%)	3 (3.9%)	11 (6.1%)	22 (19%)	3 (3.0%)	21 (9.6%)	**<0.001**
comed_levofloxacin	359 (31%)	27 (22%)	6 (7.8%)	24 (13%)	20 (17%)	34 (34%)	139 (63%)	**<0.001**
comed_teicoplanin	37 (4.5%)	0 (0%)	0 (0%)	7 (3.9%)	2 (1.7%)	0 (0%)	28 (13%)	**<0.001**
comed_ethambutol	8 (1.0%)	0 (0%)	0 (0%)	2 (1.1%)	6 (5.2%)	0 (0%)	0 (0%)	**<0.001**
comed_pyrazinamid	12 (1.5%)	0 (0%)	0 (0%)	5 (2.8%)	7 (6.0%)	0 (0%)	0 (0%)	**<0.001**
comed_rifampin	17 (2.1%)	0 (0%)	0 (0%)	7 (3.9%)	9 (7.8%)	1 (1.0%)	0 (0%)	**<0.001**
comed_heparin	207 (25%)	12 (9.6%)	2 (2.6%)	74 (41%)	24 (21%)	33 (33%)	62 (28%)	**<0.001**
comed_clopidogrel	40 (4.9%)	7 (5.6%)	4 (5.2%)	1 (0.6%)	0 (0%)	8 (8.0%)	20 (9.1%)	**<0.001**
comed_enoxaparin	350 (43%)	33 (26%)	13 (17%)	117 (65%)	44 (38%)	40 (40%)	103 (47%)	**<0.001**
comed_dexamethason	105 (13%)	0 (0%)	0 (0%)	74 (41%)	20 (17%)	2 (2.0%)	9 (4.1%)	**<0.001**
comed_amiodaron	36 (4.4%)	8 (6.4%)	0 (0%)	14 (7.8%)	5 (4.3%)	4 (4.0%)	5 (2.3%)	**0.026**
comed_furosemid	436 (53%)	72 (58%)	15 (19%)	81 (45%)	49 (42%)	71 (71%)	148 (68%)	**<0.001**
comed_haloperidol	52 (6.4%)	3 (2.4%)	4 (5.2%)	20 (11%)	4 (3.4%)	5 (5.0%)	16 (7.3%)	**0.034**
comed_valproat	32 (3.9%)	0 (0%)	1 (1.3%)	10 (5.6%)	5 (4.3%)	3 (3.0%)	13 (5.9%)	**0.024**
comed_aceclofenac	1 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_naproxen	1 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	

Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
comed_daptomycin	1 (0.1%)	0 (0%)	0 (0%)	0 (0%)	1 (0.9%)	0 (0%)	0 (0%)	0.4
comed_cetirizine	6 (0.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (2.7%)	**0.016**
comed_simvas	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_bisoprolol	6 (0.7%)	4 (3.2%)	0 (0%)	1 (0.6%)	1 (0.9%)	0 (0%)	0 (0%)	**0.031**
comed_diltiazem	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_eptifibatid	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_quinidin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_carbamazepin	8 (1.0%)	0 (0%)	0 (0%)	7 (3.9%)	0 (0%)	0 (0%)	1 (0.5%)	**0.005**
comed_phenytoin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_mirtazapin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_quetiapin	4 (0.5%)	1 (0.8%)	1 (1.3%)	0 (0%)	0 (0%)	0 (0%)	2 (0.9%)	0.5
comed_ondansetron	6 (0.7%)	2 (1.6%)	1 (1.3%)	0 (0%)	3 (2.6%)	0 (0%)	0 (0%)	**0.020**
comed_palonosetron	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_oseltamivir	3 (0.4%)	1 (0.8%)	1 (1.3%)	1 (0.6%)	0 (0%)	0 (0%)	0 (0%)	0.4
comed_quinin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_pembrolizumab	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_trastuzumab	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_atezolizumab	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_durvalumab	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_IVIG	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_tacrolimus	1 (0.1%)	1 (0.8%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0.5
comed_fluorouracil	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_irinotecan	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_leucovorin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
comed_oxaliplatin	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
flag_ADR_TRM_ID	264 (32%)	34 (27%)	22 (29%)	59 (33%)	35 (30%)	38 (38%)	76 (35%)	0.5
ADR_CTCAE_max								**<0.001**
1	85 (32%)	11 (32%)	9 (41%)	17 (29%)	7 (20%)	7 (18%)	34 (45%)	

Characteristic	Overall, N = 817	BM1, N = 125	BM2, N = 77	ND1, N = 180	ND2, N = 116	TN1, N = 100	TN2, N = 219	p-value
2	78 (30%)	10 (29%)	6 (27%)	12 (20%)	6 (17%)	17 (45%)	27 (36%)	
3	49 (19%)	4 (12%)	3 (14%)	17 (29%)	7 (20%)	6 (16%)	12 (16%)	
4	52 (20%)	9 (26%)	4 (18%)	13 (22%)	15 (43%)	8 (21%)	3 (3.9%)	
ADR_onset_first	4.0 (2.0 - 10.0)	2.0 (1.0 - 9.8)	3.5 (2.0 - 7.8)	4.0 (2.0 - 9.0)	6.0 (2.5 - 11.0)	4.0 (2.0 - 9.0)	6.0 (2.0 - 11.0)	0.15
ADR_PLT_ratio	0.36 (0.22 - 0.52)	0.55 (0.26 - 0.64)	0.39 (0.21 - 0.58)	0.37 (0.26 - 0.50)	0.30 (0.16 - 0.45)	0.36 (0.20 - 0.48)	0.35 (0.25 - 0.50)	0.077

Source: Article Notebook

Model Performance

performance_type	C_index	calibration_intercept	calibration_slope
Apparent	0.7805907	0.0000000	1.0000000
Bootstrap	0.7460291	-0.0133039	0.8155761
K-fold	0.7508108	-0.0206981	0.9113817

Source: Article Notebook