The prescription rates of antipsychotics and sedatives in the management of delirium in palliative care in South Korea

Kyung-Lak Son¹, Kwang-Min Lee², Chan-Woo Yeom³, Kyu-Han Oh⁴, B.J. Hahm³

¹Dongguk University Ilsan Hospital, Psychiatry, Goyang, South Korea.
²Seoul National University Hospital, Department of Public Health Medical Service, Seoul, South Korea.
³Seoul National University Hospital, Psychiatry, Seoul, South Korea.
⁴Maeumsaran Hospital, Jeonju, South Korea.

Contact details: kison01@gmail.com

INTRODUCTION

- Delirium is common in patients receiving palliative care, which reduces the quality of life of the patients.
- Although nearly half of the delirium among such population is reversible, the importance of early detection and timely management is often overlooked.
- In this study, we investigated the prescription rates of drugs administered for delirium management, using claims data from the Health Insurance Review and Assessment Service (HIRA) in South Korea.

METHODS

- We obtained information on palliative care among a nationwide cohort of 20,556 patients whose diagnoses were registered as palliative care from January 1, 2013 to December 31, 2016, based on HIRA claim data.
- The prescription rates of antipsychotics, benzodiazepines and opioid analgesics according to year, age, and hospital levels were analyzed by Cochran-Armitage test.

RESULTS

Table 1 .Demographics and medication rates of participants

Demographics	N = 20,556 Mean ± SD or n (%)	Medication rates	N = 20,556 n (%)
Sex		Antipsychotics	4836 (23.5%)
Male	11969 (58.3%)	Haloperidol	3845 (18.7%)
Female	8587 (41.7%)	Olanzapine	84 (0.4%)
Age	70.4 ± 12.9	Risperidone	381 (1.9%)
Age group		Quetiapine	1750 (8.5%)
≤ 60	116 (2.3%)	Benzodiazepines	6272 (30.5%)
60s	310 (6.2%)	Lorazepam	4582 (22.3%)
70s	1520 (30.6%)	Diazepam	1463 (7.1%)
> 80	1090 (21.9%)	Alprazolam	1232 (6.0%)
Hospital type		Clonazepam	266 (1.3%)
Primary	820 (16.5%)	Opioid alagesics	13834 (67.3%)
Secondary	4152 (83.5%)	Morphine	9176 (44.6%)
Tertiary	2 (0.0%)	Oxycodone	3183 (15.5%)
		Fentanyl	1176 (5.7%)
		Tramadol	7604 (37.0%)

- The prescription rate of antipsychotics significantly increased from 19.8% in 2013 to 26.2% in 2016 ($p < 0.001$) (Table 2).
- As age increased, the prescription rate of quetiapine significantly increased (5.6% in ≤60 years to 11.5% in >80 years, $p < 0.001$) and that of benzodiazepines significantly decreased (35.7% to 25.4%, $p = 0.024$) (Table 3).
- As the level of the hospital increased from primary-level hospital to tertiary hospital, the prescription rate of antipsychotics significantly increased (17.1% to 33.2%, $p < 0.001$) (Table 4).

Table 2. Medication rate according to year

	2013 (n = 4974)	2014 (n = 4997)	2015 (n = 4918)	2016 (n = 5667)	p-value
Antipsychotics	985 (19.8%)	1160 (23.2%)	1208 (24.6%)	1483 (26.2%)	< 0.001
Haloperidol	787 (15.8%)	928 (18.6%)	983 (20.0%)	1147 (20.2%)	0.024
Olanzapine	17 (0.3%)	28 (0.6%)	14 (0.3%)	25 (0.4%)	0.930
Risperidone	116 (2.3%)	101 (2.0%)	69 (1.4%)	95 (1.7%)	0.003
Quetiapine	310 (6.2%)	384 (7.7%)	446 (9.1%)	610 (10.8%)	< 0.001
Benzodiazepines	1520 (30.6%)	1461 (29.2%)	1452 (29.5%)	1839 (32.5%)	0.024
Lorazepam	1090 (21.9%)	1032 (20.7%)	1041 (21.2%)	1419 (25.0%)	< 0.001
Diazepam	459 (9.2%)	404 (8.1%)	291 (5.9%)	309 (5.5%)	< 0.001
Alprazolam	305 (6.1%)	292 (5.8%)	285 (5.8%)	350 (6.2%)	0.916
Clonazepam	50 (1.0%)	61 (1.2%)	76 (1.5%)	79 (1.4%)	0.038
Opioid alagesics	3185 (64.0%)	3269 (65.4%)	3322 (67.5%)	4058 (71.6%)	< 0.001
Morphine	2091 (42.0%)	2132 (42.7%)	2234 (45.4%)	2719 (48.0%)	< 0.001
Oxycodone	657 (13.2%)	657 (13.1%)	638 (13.0%)	1231 (21.7%)	< 0.001
Fentanyl	98 (2.0%)	130 (2.6%)	334 (6.8%)	614 (10.8%)	< 0.001
Tramadol	1793 (36.0%)	1916 (38.3%)	1825 (37.1%)	2070 (36.5%)	0.999

Table 3. Medication rate according to age groups

	≤ 60 (n = 4,725)	60s (n = 4,170)	70s (n = 6,919)	> 80 (n = 4,742)	p-value
Antipsychotics	1,018 (21.5%)	1,010 (24.2%)	1,683 (24.3%)	1,125 (23.7%)	0.010
Haloperidol	867 (18.3%)	846 (20.3%)	1,325 (19.2%)	807 (17.0%)	0.063
Olanzapine	13 (0.3%)	24 (0.6%)	27 (0.4%)	20 (0.4%)	0.525
Risperidone	56 (1.2%)	75 (1.8%)	158 (2.3%)	92 (1.9%)	0.001
Quetiapine	264 (5.6%)	279 (6.7%)	664 (9.6%)	543 (11.5%)	< 0.001
Benzodiazepines	1,688 (35.7%)	1,331 (31.9%)	2,049 (29.6%)	1,204 (25.4%)	< 0.001
Lorazepam	1291 (27.3%)	1023 (24.5%)	1,454 (21.0%)	814 (17.2%)	< 0.001
Diazepam	381 (8.1%)	288 (6.9%)	485 (7.0%)	309 (6.5%)	0.006
Alprazolam	282 (6.0%)	235 (5.6%)	458 (6.6%)	257 (5.4%)	0.788
Clonazepam	72 (1.5%)	56 (1.3%)	84 (1.2%)	54 (1.1%)	0.075
Opioid alagesics	3,303 (69.9%)	3,002 (72.0%)	4,701 (67.9%)	2,828 (59.6%)	< 0.001
Morphine	2429 (51.4%)	2,096 (50.3%)	3,029 (43.8%)	1,622 (34.2%)	< 0.001
Oxycodone	795 (16.8%)	738 (17.7%)	1,096 (15.8%)	554 (11.7%)	< 0.001
Fentanyl	352 (7.4%)	268 (6.4%)	366 (5.3%)	190 (4.0%)	< 0.001
Tramadol	1651 (34.9%)	1567 (37.6%)	2623 (37.9%)	1763 (37.2%)	0.017

Table 4. Medication rate according to hospital type

	Primary hospital (n = 2,421)	Secondary hospital (n = 17,674)	Tertiary hospital (n = 461)	p-value
Antipsychotics	414 (17.1%)	4269 (24.2%)	153 (33.2%)	< 0.001
Haloperidol	261 (10.8%)	3451 (19.5%)	133 (28.9%)	< 0.001
Olanzapine	9 (0.4%)	68 (0.4%)	7 (1.5%)	0.070
Risperidone	19 (0.8%)	355 (2.0%)	7 (1.5%)	< 0.001
Quetiapine	209 (8.6%)	1503 (8.5%)	38 (8.2%)	0.775
Benzodiazepines	513 (21.2%)	5584 (31.6%)	175 (38.0%)	< 0.001
Lorazepam	231 (9.5%)	4187 (23.7%)	164 (35.6%)	< 0.001
Diazepam	190 (7.8%)	1262 (7.1%)	11 (2.4%)	0.003
Alprazolam	153 (6.3%)	1062 (6.0%)	17 (3.7%)	0.133
Clonazepam	40 (1.7%)	217 (1.2%)	9 (2.0%)	0.337
Opioid alagesics	1219 (50.4%)	12251 (69.3%)	364 (79.0%)	< 0.001
Morphine	638 (26.4%)	8264 (46.8%)	274 (59.4%)	< 0.001
Oxycodone	138 (5.7%)	2870 (16.2%)	175 (38.0%)	< 0.001
Fentanyl	179 (7.4%)	895 (5.1%)	102 (22.1%)	0.004
Tramadol	835 (34.5%)	6631 (37.5%)	138 (29.9%)	0.263

CONCLUSIONS

- The prescription rate of antipsychotics in patients receiving palliative care increased during 2013-2016, indicating the improvement of physicians' awareness of delirium management.
- However, prescription rates of antipsychotics varied widely by hospital level, suggesting that education and palliative consultation on delirium management for palliative care providers may be required.