

Real-World Auvelity® (AXS-05) Patient Characteristics in Major Depressive Disorder

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Objective

- To examine how Auvelity is used in the real-world setting for patients with MDD in the US

Conclusions

- Using a large claims database in the US, this initial real-world assessment of Auvelity identified 22,288 patients diagnosed with MDD who began Auvelity treatment within one year of its introduction
- Approximately 10% of patients were treatment-naïve during the 12-month pre-index period
- Nearly 29% of all patients and 98% of treatment-naïve patients initiated Auvelity as monotherapy
- PCPs, NPs, and PAs played a significant role in MDD management, accounting for 27% of initial Auvelity prescriptions
- The majority of patients presented with mental health-related comorbidities and had previously attempted various treatments for MDD, emphasizing the necessity for alternative therapeutic approaches

References

- McIntyre R, et al. *World Psychiatry*. 2023;22(3):394-412.
- Cho Y, et al. *PLoS One*. 2019;14(7):e0219455.
- IsHak WW, et al. *TACD*. 2016;7(3):140-9.
- Dhodapkar RM. *PLoS One*. 2020;15(5):e0232373.
- Buch AM and Liston C. *Neuropsychopharmacology*. 2021;46:156-175.
- Pigott HE, et al. *BMJ Open*. 2023;13(7):e063095.
- Rush AJ, et al. *Am J Psychiatry*. 2006;163(11):1905-17.
- Hentler ID, et al. *CNS Drugs*. 2021;35(5):527-43.
- Stahl SM. *CNS Spectr*. 2019;24(5):461-6.

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Disclosures

A Muzyk and FZ Syed report no conflict of interest relevant to this poster
H Zhou and J Cong are employees of KMK Consulting, LLC.
H Tabuteau and Y Zhao are employees of Axsome Therapeutics Inc.



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INTRODUCTION

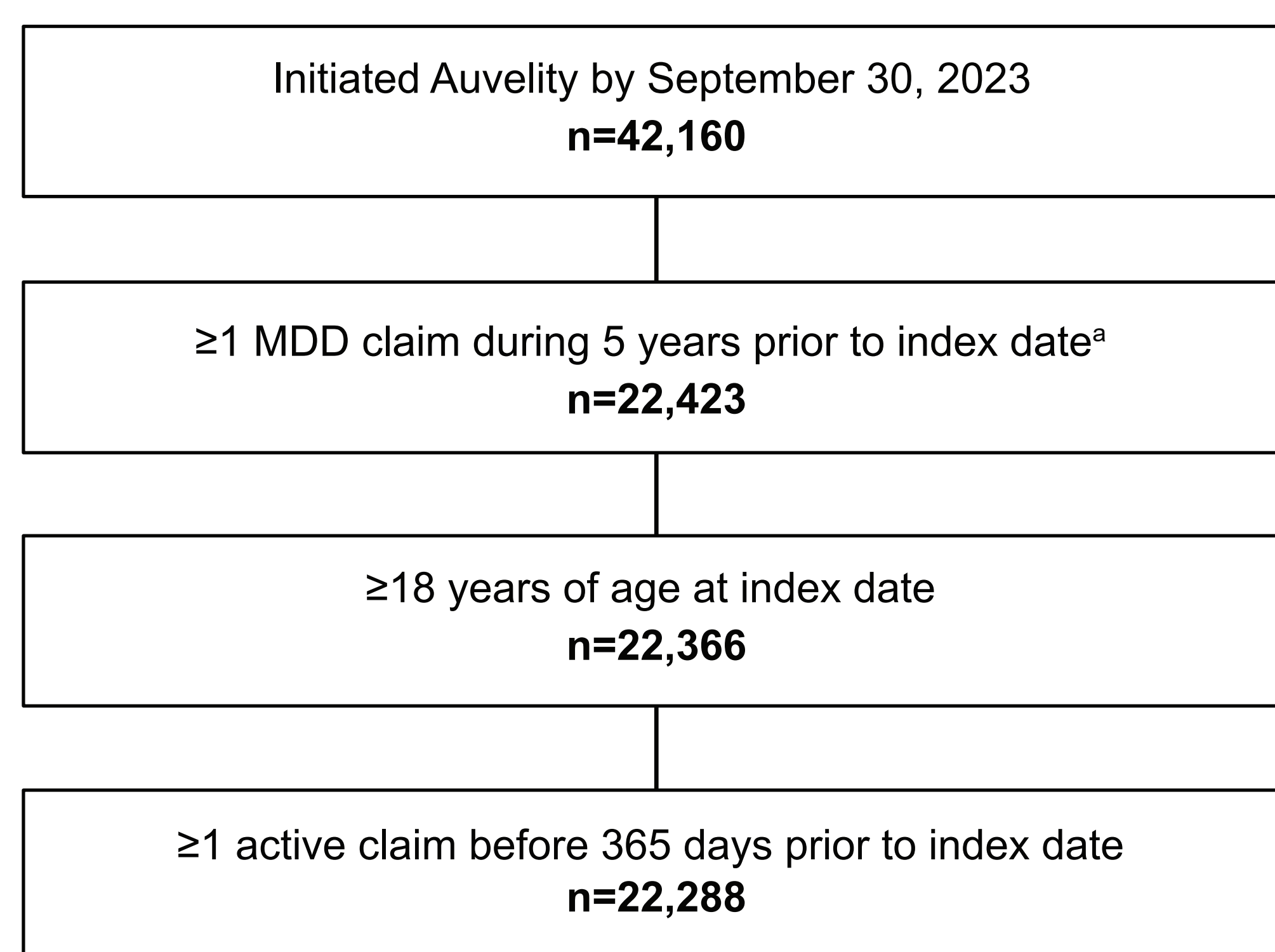
- Major depressive disorder (MDD) is a prevalent and chronic disorder associated with decreased quality of life, increased functional impairment, morbidity, and mortality¹⁻⁴
- MDD treatment varies due to differences in presentation, patient demographics, and clinical characteristics, often leading to inadequate patient response to monoamine-targeted therapies^{5,6}
- Despite several approved treatment classes, patients often struggle to achieve remission, highlighting the need for new options^{6,7}
- N-methyl-D-aspartate (NMDA) receptor antagonism, exemplified by esketamine and now Auvelity (45-mg dextromethorphan/105-mg bupropion), offers novel therapeutic pathways for MDD⁸
- Auvelity, an oral, NMDA receptor antagonist, sigma-1 receptor agonist, and aminoketone CYP2D6 inhibitor, was approved in Aug 2022 for the treatment of MDD in adults⁹
 - The dextromethorphan component of Auvelity is an antagonist of the NMDA receptor, an ionotropic glutamate receptor, and a sigma-1 receptor agonist which modulates glutamatergic neurotransmission
 - The bupropion component of Auvelity is an aminoketone that is a CYP2D6 inhibitor that increases the bioavailability of dextromethorphan, and is a weak norepinephrine and dopamine reuptake inhibitor

RESULTS

Patient characteristics

- Overall, 22,288 patients with MDD treated with Auvelity (mean age 45.1 years; 68.1% women) were included (Figure 1 and Table 1)
- The largest proportion of patients were aged 35-44 years (22.6%), lived in the South (40.0%), and were covered by commercial insurance (58.5%)
- Around 70% of patients obtained their initial Auvelity prescription from psychiatrists/mental health specialists, with primary care physicians (PCPs) and nurse practitioners/physician's assistants (NPs/PAs) each accounting for 13.6% of prescriptions
- The most common comorbidities in the 12-month pre-index period were mental health disorders (53.5%; 47.6% had anxiety disorders), followed by metabolic (26.4%) and musculoskeletal/pain (22.6%) (Table 2)

Figure 1. Patient Attrition Diagram



^aICD-10-CM codes: F32.*, F33.*

Table 1. Patient Demographics

Parameter	All Auvelity Patients (N=22,288)	Treatment-naïve Patients Prior to Auvelity Initiation ^a (n=2,254)
Age, mean (SD), years	45.1 (14.7)	44.0 (14.5)
Age groups, n (%)		
18 to 34 years	6,089 (27.3)	686 (30.4)
35 to 54 years	9,894 (44.4)	988 (43.8)
55 to 64 years	4,005 (18.0)	358 (15.9)
≥65 years old	2,300 (10.3)	222 (9.8)
Female, n (%)	15,188 (68.1)	1,451 (64.4)
U.S. Region, n (%)		
South	8,915 (40.0)	1,042 (46.2)
Midwest	6,860 (30.8)	586 (26.0)
Northeast	3,748 (16.8)	314 (13.9)
West	2,650 (11.9)	295 (13.1)
Health insurance, n (%)		
Commercial	13,035 (58.5)	1,318 (58.5)
Medicaid	3,991 (17.9)	374 (16.6)
Medicare	3,443 (15.4)	284 (12.6)
Initiating healthcare provider specialty, n (%)		
Psychiatry and mental health	15,562 (69.8)	1,427 (63.3)
PCP	3,032 (13.6)	394 (17.5)
NP/PA	3,041 (13.6)	338 (15.0)

^aPatients who did not receive treatment during the 12-month pre-index period.
NP, nurse practitioner; PA, physician's assistant; PCP, primary care provider.

Table 2. Patient Comorbidities

Parameter	All Auvelity Patients (N=22,288)	Treatment-naïve Patients Prior to Auvelity Initiation ^a (n=2,254)
Comorbidities, n (%) ^b		
Mental health disorder	11,933 (53.5)	1,074 (47.6)
Anxiety	10,606 (47.6)	946 (42.0)
ADHD, conduct disorders, and hyperkinetic syndrome	3,132 (14.1)	283 (12.6)
Bipolar disorder	2,682 (12.0)	187 (8.3)
PTSD	2,548 (11.4)	181 (8.0)
Metabolic	5,890 (26.4)	539 (23.9)
Hyperlipidemia	3,409 (15.3)	316 (14.0)
Obesity	3,154 (14.2)	287 (12.7)
Diabetes/pre-diabetes	2,091 (9.4)	181 (8.0)
Musculoskeletal/pain	5,029 (22.6)	446 (19.8)
Low back pain	2,559 (11.5)	224 (9.9)
Rheumatoid arthritis/osteoarthritis	2,475 (11.1)	208 (9.2)
Migraine and chronic headache	1,657 (7.4)	134 (5.9)
Cardiovascular disease	4,227 (19.0)	382 (16.9)
Hypertension	3,789 (17.0)	347 (15.4)
Sleep disorders	4,097 (18.4)	347 (15.4)
Sleep apnea	2,620 (11.8)	223 (9.9)
Insomnia	1,810 (8.1)	145 (6.4)
Substance use disorder	1,965 (8.8)	155 (6.9)

^aPatients who did not receive treatment during the 12-month pre-index period. ^bAdditional medical conditions included: Mental health - eating disorder, obsessive compulsive disorder, personality disorders, schizoaffective disorder, schizophrenia; Musculoskeletal/pain - arthritis, osteoporosis with or without pathology, fracture; Cardiovascular - heart failure, ischemic heart disease, myocardial infarction, peripheral vascular disease, stroke/transient ischemic attack; Sleep disorders - narcolepsy; Substance use disorder - alcohol use disorder, drug use disorder; ADHD, attention deficit disorder; PTSD, post-traumatic stress disorder.

Treatment-naïve patients

- Demographics of the 2,254 (10.1%) treatment-naïve patients resembled the overall Auvelity population (mean age 44.0 years; 64.4% women) (Table 1)
- The largest proportion of treatment-naïve patients lived in the South (46.2%), had commercial insurance (58.5%), and received their initial Auvelity prescriptions from their psychiatrist/mental health provider (63.3%)
- PCPs and NPs/PAs accounted for a higher proportion of Auvelity prescriptions in treatment-naïve patients than the overall population (32.5% vs 27.2%)
- The prevalence of comorbidities was lower in treatment-naïve patients than the overall Auvelity population (Table 2)
- Overall, 2,200 (97.6%) of the treatment-naïve patients initiated Auvelity treatment as monotherapy

METHODS

Study design

- Adult patients initiating Auvelity in the Symphony IDV® claims databases between Aug 2017-Sep 2023 were identified with the first Auvelity claim as the index date
- Eligible patients had ≥1 active claim over the 12-month pre-index period, and ≥1 MDD diagnosis (ICD-10-CM codes: F32.*, F33.*) over the 5-year pre-index period

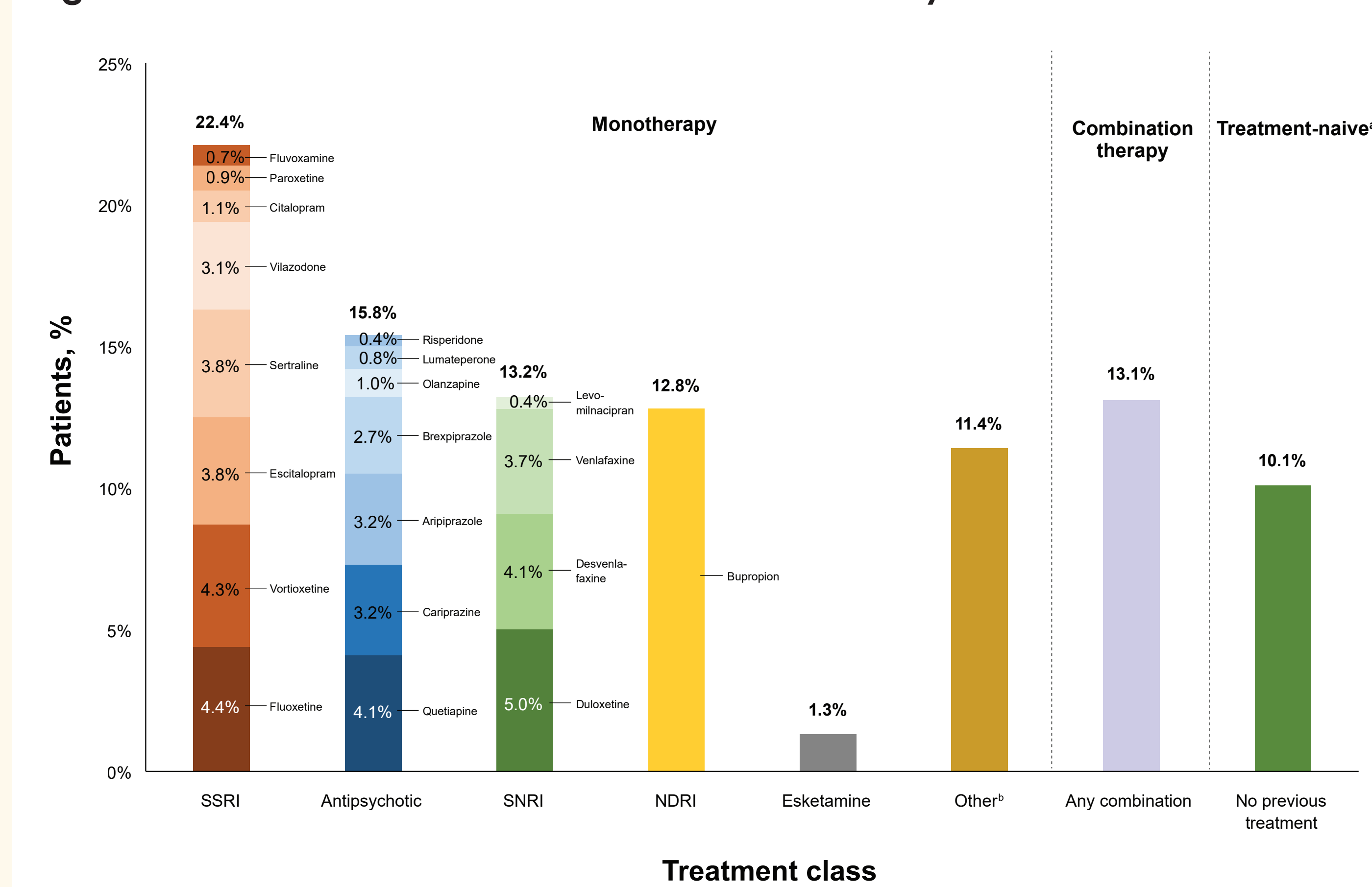
Outcomes

- Patient demographics and clinical characteristics (comorbidities and prior MDD-related medication use) during the 12-month pre-index period
- Initiation status of Auvelity: monotherapy or add-on therapy
 - Therapies that Auvelity was added on to
- Specialty of the prescriber for the initial Auvelity claim
- Characteristics of patients who did not receive any MDD-related treatment during the 12-month pre-index period ("treatment-naïve patients") and their Auvelity initiation status

MDD treatments prior to Auvelity initiation

- The last MDD-related treatment that was used prior to Auvelity initiation comprised SSRI (22.4%), SNRI (13.2%), and NDRI (12.8%) monotherapies; only 1.3% of patients were treated with esketamine (Figure 2)
- A total of 2,254 (10.1%) patients initiated Auvelity without any MDD-related treatment in the 12-month pre-index period

Figure 2. Last MDD-Related Treatment Prior to Auvelity Initiation



*Patients who did not receive treatment during the 12-month pre-index period. *Other includes MAOI, SARI, TeCA, MAOI, monoamine oxidase inhibitor; MDD, major depressive disorder; NDRI, norepinephrine and dopamine reuptake inhibitor; SARI, serotonin antagonist reuptake inhibitor; SNRI, serotonin and norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; TeCA, tetracyclic antidepressant.

MDD treatment during the 12-month pre-index period

- 20,034 (89.9%) patients received any MDD-related treatment and 18,665 (83.7%) patients had received treatment with any SSRI/SNRI/NDRI (Table 3)
- Overall, 2.9% of patients utilized esketamine treatment

Table 3. MDD-Related Treatment During the 12-Month Pre-Index Period

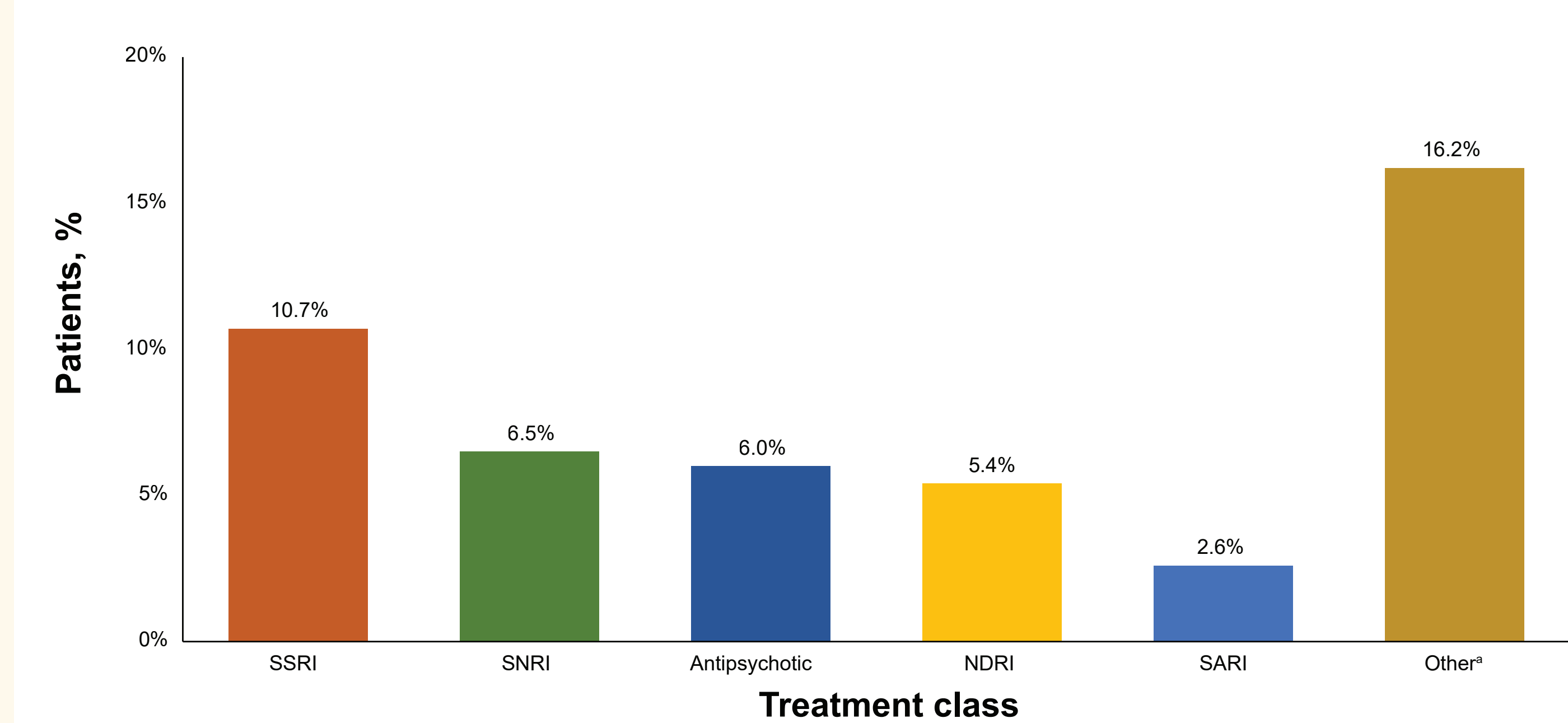
Treatment, n (%)	All Auvelity Patients (N=22,288)
Any MDD-related treatment	20,034 (89.9)
Any SSRI/NDRI/SNRI	18,665 (83.7)
Any SSRI	12,234 (54.9)
Fluoxetine	3,071 (13.8)
Vortioxetine	2,902 (13.0)
Escitalopram	2,849 (12.8)
Sertraline	2,775 (12.5)
Vilazodone	1,948 (8.7)
Citalopram	815 (3.7)
Paroxetine	665 (3.0)
Fluvoxamine	529 (2.4)
NDRI (bupropion only)	9,015 (40.4)
Any SNRI	8,002 (35.9)
Duloxetine	3,306 (14.8)
Desvenlafaxine	2,683 (12.0)
Venlafaxine	2,608 (11.7)
Levomilnacipran	1,371 (6.2)
Any antipsychotic	10,182 (45.7)
Aripiprazole	3,656 (16.4)
Quetiapine	3,214 (14.4)
Cariprazine	2,422 (10.9)
Brexipiprazole	2,378 (10.7)
Clonazepam	1,186 (5.3)
Lumateperone	700 (3.1)
Risperidone	530 (2.4)
Any SARI	5,205 (23.4)
Any TeCA	2,523 (11.3)
TeCA (mirtazapine only)	2,150 (9.6)
Ketamine	660 (2.9)
Esketamine	654 (2.9)
Ketamine	8 (0.0)
Any MAOI	202 (0.9)

MAOI, monoamine oxidase inhibitor; MDD, major depressive disorder; NDRI, norepinephrine and dopamine reuptake inhibitor; SARI, serotonin antagonist reuptake inhibitor; SNRI, serotonin and norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; TeCA, tetracyclic antidepressant.

Auvelity initiation

- Auvelity was initiated as monotherapy in 6,418 (28.8%) patients and as an add-on therapy in 15,870 (71.2%) patients, most frequently to an SSRI (10.7%) alone or SNRI (6.5%) alone (Figure 3)

Figure 3. Initiation of Auvelity as an Add-On Therapy (Frequency ≥2%)



*Other includes antipsychotic + SSRI, NDRI + SSRI, antipsychotic + SNRI, NDRI + SNRI, and SARI + SSRI. MDD, major depressive disorder; NDRI, norepinephrine and dopamine reuptake inhibitor; SARI, serotonin antagonist reuptake inhibitor; SNRI, serotonin and norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor.