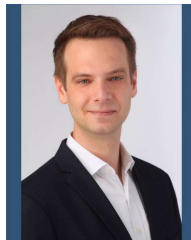


Healthcare Utilization in Patients with Treatment-Resistant Depression (TRD) in Austria

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Matthäus Traunfellner*

*IPF Institute for Pharmaeconomic Research, Vienna, Austria



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INTRODUCTION

- Major Depressive Disorder (MDD) is a serious mental disorder that belongs to the leading causes of disability worldwide. In 2015 4.4% of the world's population suffered from MDD. In Austria, the estimated prevalence is 5.7%.
- Treatment-resistant depression (TRD) in Major Depressive Disorder is most commonly defined as the failure to respond to at least two anti-depressant (AD) regimens of adequate length and adherence.
- About two thirds (35%) of MDD-patients progress to TRD, an episodic condition, which is associated with significantly diminished HRQoL, increased work productivity losses, activity impairments and healthcare utilization (HU) compared with non-TRD-patients, suggesting an unmet need in the treatment of TRD.
- The study objective was to assess the HU of Austrian TRD-patients in different health-states (acute depressive episode, response, remission/recovery).

METHODS

- Four mental health specialists from public health institutions, treating about 54 TRD-patients per month, were asked to answer a survey. The medical resource consumption of different health-states, defined by the PHQ-9 score (15-27: moderately severe to severe - acute depressive episode, 5-14: mild to moderate - response, 0-4: none to minimal - remission/recovery), was determined separately.
- The survey was conducted as an online-survey and consisted of three chapters with 12 items, containing open, constant-sum and multiple-choice questions.

Outpatient visits:

To determine the HU of outpatient care, the mental health specialists were asked about the proportion of affected patients per health-state and the average number of visits per year. Visits to the emergency room (ER), outpatient clinic, general practitioner, psychiatrist and psychotherapist were considered.

Inpatient stays:

The HU of inpatient care was assessed as the percentage of affected patients, the average number of inpatient stays and the average length of stay (LOS) per patient and health-state. The data was queried as visits per year. Additionally, the proportion of patients requiring intensive care (ICU), with the average number of hospitalizations and LOS was determined.

Diagnostic measures:

The mental health specialists gave free answers regarding the diagnostic measures required to treat TRD per health-state. The percentage of affected patients as well as the frequency of diagnostic measures per year was registered.

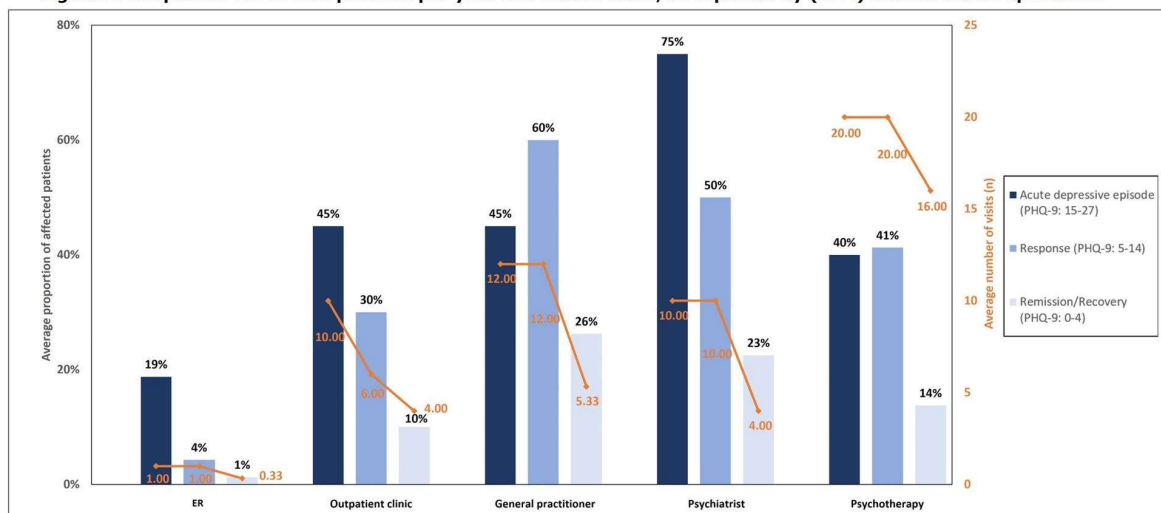
The survey was completed by all four invited mental health specialists (n=4). A comprehensive tabular presentation of the averaged results for outpatient visits, inpatient stays and diagnostic measures, stratified by health-state, are shown in **Table 1-3**.

RESULTS - OUTPATIENT VISITS

Outpatient visits:

The emergency room and outpatient was attended by an average of 19% of patients with the health-state acute depressive episode compared to 4% of patients with the response and 1% of patients with the remission/recovery health-state. The average number of visits per year is 1.00 for patients during an acute depressive episode or in response and 0.33 for patients in remission/recovery. TRD-patients in the acute depressive episode health-state more frequently visit the outpatient clinic and psychiatrist (45% of patients, 10.00 visits per year and 75% of patients, 10.00 visits per year) compared to TRD-patients in less severe health-states. However, TRD-patients during an acute depressive episode less often attend a general practitioner (45% of patients, 12.00 visits per year) as TRD-patients in the response health state (60% of patients, 12.00 visits per year). Psychotherapy usage is less common in TRD-patients with the remission/recovery health-state (14% of patients, 16.00 visits per year) compared to the other health-states (acute depressive episode: 40% of patients, 20.00 visits per year; response: 41% of patients, 20.00 visits per year). A graphical and tabular representation and of the results is shown in **Figure 1** and **Table 1**.

Figure 1: Outpatient HU of TRD patients per year and health-state, as reported by (n=4) mental health specialists



Source: HU survey, own calculations

Table 1: Outpatient visits of TRD patients per year, stratified by health state, as reported by (n=4) mental health specialists

Outpatient visits						
Health-state (PHQ-9)	Acute depressive episode (15-27 - moderately severe to severe)		Response (5-14 - mild to moderate)		Remission/Recovery (0-4 - none to minimal)	
	% of affected patients	No. of visits per year	% of affected patients	No. of visits per year	% of affected patients	No. of visits per year
ER	19%	1.00	4%	1.00	1%	0.33
Outpatient clinic	45%	10.00	30%	6.00	10%	4.00
General practitioner	45%	12.00	60%	12.00	26%	5.33
Psychiatrist	75%	10.00	50%	10.00	23%	4.00
Psychotherapy	40%	20.00	41%	20.00	14%	16.00

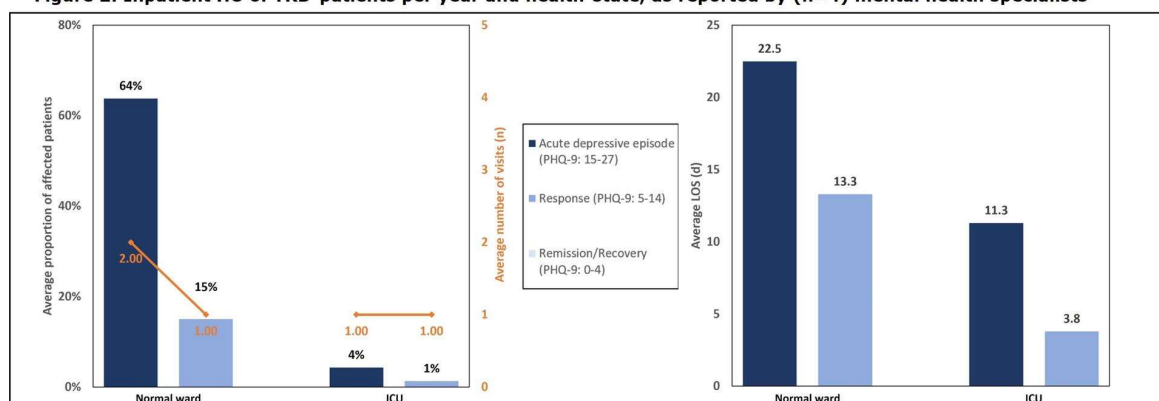
Source: HU survey, own calculations

RESULTS - INPATIENT STAYS

Inpatient stays:

No inpatient stays are expected to occur during the treatment of TRD-patient in the health-state remission/recovery (0% of patients, 0.00 visits per year, LOS 0.00 days). 64% of TRD-patients during an acute depressive episode and 15% of TRD-patient in response are treated in a normal ward in one year with an average of two or one stay(s) respectively. The average LOS is 22.5 days for TRD-patients with an acute depressive episode and 13.3 days for TRD-patients in response. 4% of TRD-patients with an acute depressive episode are expected to have one stay in the ICU with an average LOS of 11.3 days, whereas 1% of TRD-patients in response are expected to experience one ICU stay with an average LOS of 3.8 days in a year (see **Figure 2** and **Table 2**).

Figure 2: Inpatient HU of TRD-patients per year and health-state, as reported by (n=4) mental health specialists



Source: HU survey, own calculations

Table 2: Inpatient stays of TRD patients per year, stratified by health state, as reported by (n=4) mental health specialists

Inpatient stays									
Health-state (PHQ-9)	Acute depressive episode (15-27 - moderately severe to severe)			Response (5-14 - mild to moderate)			Remission/Recovery (0-4 - none to minimal)		
	% of affected patients	No. of visits per year	Average LOS	% of affected patients	No. of visits per year	Average LOS	% of affected patients	No. of visits per year	Average LOS
Normal ward	64%	2.00	22.5	15%	1.00	13.3	0%	0.00	0.0
Intensive ward	4%	1.00	11.3	1%	1.00	3.8	0%	0.00	0.0

Source: HU survey, own calculations

RESULTS - DIAGNOSTIC MEASURES

Diagnostic measures:

Diagnostic measures for the treatment of TRD-patients were considered as outcome of the survey if they were reported by at least two mental health specialists for TRD-patients of a given health-state. The most often reported diagnostic measures for TRD-patients with an acute depressive episode were an electrocardiogram (ECG; n=4) and a complete blood count (CBC; n=4); ECG, CBC and TSH levels for TRD-patients in response (n=3 each) and ECG and CBC for TRD-patients in remission/recovery (n=2 each). The diagnostic measures with the number of mentions (n) is shown in **Table 3**.

Table 3: Diagnostic measures for TRD patients per year, stratified by health state, as reported by (n=4) mental health specialists

Diagnostic measures									
Health-state (PHQ-9)	Acute depressive episode (15-27 - Moderately severe to severe)			Response (5-14 - Mild to moderate)			Remission/Recovery (0-4 - None to minimal)		
	Number of mentions (n)	% of affected patients	No. of visits per year	Number of mentions (n)	% of affected patients	No. of visits per year	Number of mentions (n)	% of affected patients	No. of visits per year
CCT	3	48%	1.00	1	-	-	0	-	-
CMRI	3	43%	1.00	2	38%	1.00	0	-	-
EEG	2	35%	1.00	1	-	-	0	-	-
ECG	4	94%	4.00	3	63%	3.00	2	40%	1.00
NE	2	40%	6.50	1	-	-	1	-	-
CBC	4	94%	4.00	3	87%	3.00	2	63%	1.50
TSH level	3	87%	2.00	3	80%	1.50	1	-	-

Source: HU survey, own calculations

CCT – Cranial computer tomography, CMRI – Cranial magnetic resonance imaging, EEG – Electroencephalogram, ECG – Electrocardiogram, NE – Neuropsychiatric examination, CBC – Complete blood count

CONCLUSION

The results of this study demonstrate a high medical resource consumption by Austrian TRD-patients during an acute depressive episode. These patients are four times more likely to be hospitalized and have about three times longer lengths of stay than patients in response. This finding suggests that there is an unmet need for this patient group.

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