A retrospective chart review study to quantify the monthly medical resource use and costs of treating patients with Treatment Resistant Depression in the United Kingdom

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BACKGROUND / OBJECTIVES

- Major Depressive Disorder (MDD) is considered by the World Health Organisation (WHO) to be the leading cause of disability globally.[i]
- Treatment Resistant Depression (TRD), a subtype of MDD, is defined as lack of clinically meaningful improvement despite the use of adequate doses of at least two antidepressant treatments prescribed for adequate duration with adequate affirmation of treatment adherence.[ii]
- The humanistic and economic burden of TRD has been reported in a number of studies [iii, iv], but it remains unclear how healthcare resource utilisation (HCRU) and costs differ based on TRD patient health states (i.e. major depressive episode (MDE), remission, recovery).[v]
- TRD is associated with a greater risk for suicide, which contributes to a higher cost burden.[vi]
- Given limitations of existing secondary data/claims analyses and publication, a retrospective chart review study was conducted to quantify monthly direct HCRU costs per patient, by TRD health states from a healthcare system perspective (United Kingdom (UK) National Health System (NHS)).

STUDY DESIGN

- This was a retrospective medical chart review of 295 adult patients classified as TRD by their treating physicians in the index window 1st Jan 2016 - 31st May 2016. Data was abstracted over a period of two years up till 31st May 2018.
- Data was abstracted by general practitioners (GP) (n=9) and psychiatrists (n=30). Patients were selected consecutively starting at the end of the index window and working backwards (**Figure 1**).
- HCRU data related to TRD were collected included primary and secondary care consultation, non-drug treatments (e.g. counselling, psychotherapy etc.), drug treatments used and all hospitalisations.
- The unit costs for the respective HCRU were derived from the Personal Social Service Research Unit (PSSRU)[vii] or British National Formulary (BNF)[viii] and were applied to estimate monthly HCRU costs.

TRD health state definitions

- The TRD health state definitions were confirmed in feasibility interviews with practicing GPs and psychiatrists in the UK. Definitions are provided in **Table 1**. A visual representation of the outcomes is presented in **Figure 1**.

Table 1. Heath state definition

MDE (TRD)
Patients with TRD who experience moderate to severe symptoms of major depressive disorder and failed to respond to at least two different AD treatments of adequate dosage and duration in the current depressive episode. Adequate dose is considered the maximal dose accepted by the BNF, while an appropriate duration is a minimum of four weeks.
Remission
Associated with a period (assumed ≤6 months in this study) during which the patient is either symptom-free or has only minimal symptoms[ix]. The period of remission may end with either relapse or recovery.
Recovery
Represents an extended asymptomatic phase, achieved after a patient remains in relapse-free remission beyond six months (corresponding to the end of the current depressive episode).

MDE= major depressive episode, TRD= treatment resistant depression, MDD= major depressive disorder

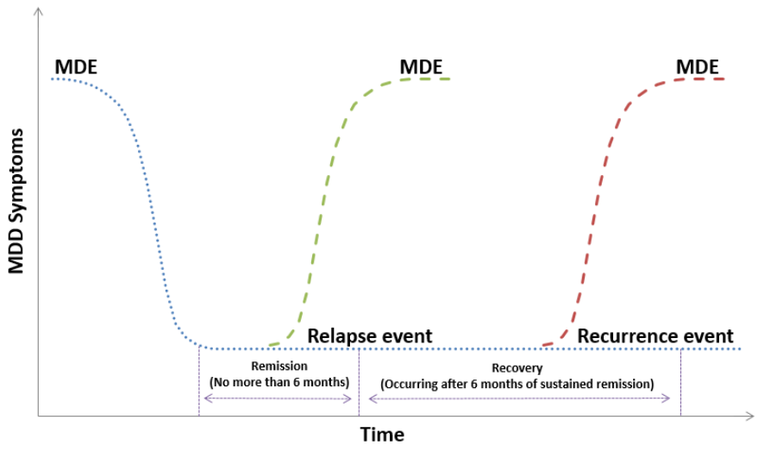

Figure 1. Outcome definitions plotted against time in months
MDD= major depressive disorder, MDE= major depressive episode

Healthcare resource utilisation data collection

- The following HCRU data were extracted for each patient with health states assigned to each resource by the treating physician:
  - Number of primary and secondary care consultations
  - Use of Crisis Resolution and Home Treatment Teams (CRHTT)
  - Number of admissions through the emergency department
  - Hospitalisations (general admissions and psychiatric, length of stay)
  - Antidepressant treatment including dosing, duration, line of therapy
  - Other psychiatric medications (anxiolytics, hypnotics and antipsychotics)
  - Non-drug treatments (e.g. electroconvulsive therapy (ECT), transcranial magnetic stimulation (TMS), psychotherapy)

Deriving costs

- Costs were estimated by health states using the pooled averages if a state occurred multiple times. MDE costs are the pooled costs including both the initial MDE and subsequent MDE. All analyses were descriptive.
  - A price per visit was applied for primary and secondary care consultations, hospitalisations and visit based therapies. For drug costs a price per day was calculated based on PSSRU.[vii]
  - The resulting figure provided an overall cost per health state per resource. This average cost was calculated on a monthly (28 days) basis to account for the varying follow-up periods. Within each individual HCRU analysis, the resource is reported for all patients with data for that specific resource. As such, sample size differ between health states and resources. Therefore, the total HCRU cost for patients can't be derived by totalling the cost of individual resources.

RESULTS

Total and all non-drug monthly costs

- Mean follow-up time for the chart review was 802 days (SD 91). Of the 295 adult patients with TRD, 60% were female with a mean age of 43 years (SD 14) and BMI of 26 (SD 4). 75% of patients had ≥1 comorbidity; the most common comorbidities were anxiety disorder (36%), and stress (29%). Little variation was observed across the health states.
- Mean monthly total HCRU costs were £991.82 in MDE, £254.30 in remission and £98.85 in recovery (**Figure 2**).
- Mean monthly total non-drug HCRU costs were £980.08 in MDE, £164.46 in remission and £83.75 in recovery.
- Time since MDD diagnosis varied widely with a mean of 62 months (SD 89) prior to index.
- About 51% of patients had experienced a prior MDE. Approximately 25% of patients in MDE were employed at index, compared with 33% in remission and 35% in recovery.

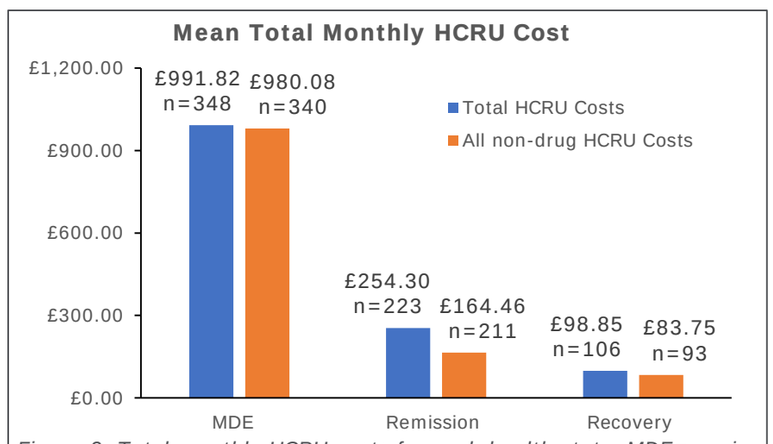

Figure 2. Total monthly HCRU costs for each health state, MDE= major depressive episode

Consultations cost

- The mean monthly cost for specialist psychiatric visits is greatest in the MDE state (£52.32), (**Figure 3**). The cost is similar in remission and recovery (£30.71 and £30.18 respectively).
- The mean monthly cost associated with primary care visits is greater in the MDE clinical state at £10.82, in comparison with £7.12 and £3.44 in remission and recovery respectively **(Figure 3).**

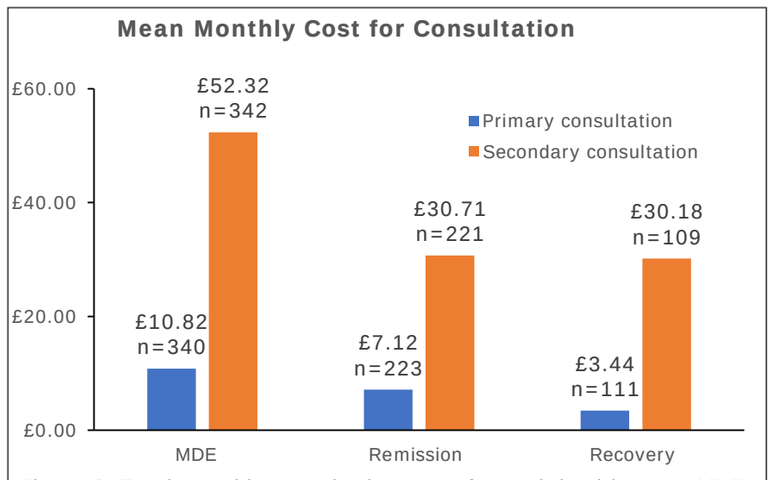

Figure 3. Total monthly consultation costs for each health state, MDE= major depressive episode

Non-drug treatment costs

- The greatest monthly cost was observed for occupational therapy (£72.72) in MDE state (**Figure 4**).
- There was very little usage of behavioural activation therapy and health coaching across all clinical state groups, leading to an average monthly cost of less than £1.00 in each group. These non-drug treatment costs are therefore not included in **Figure 4**.

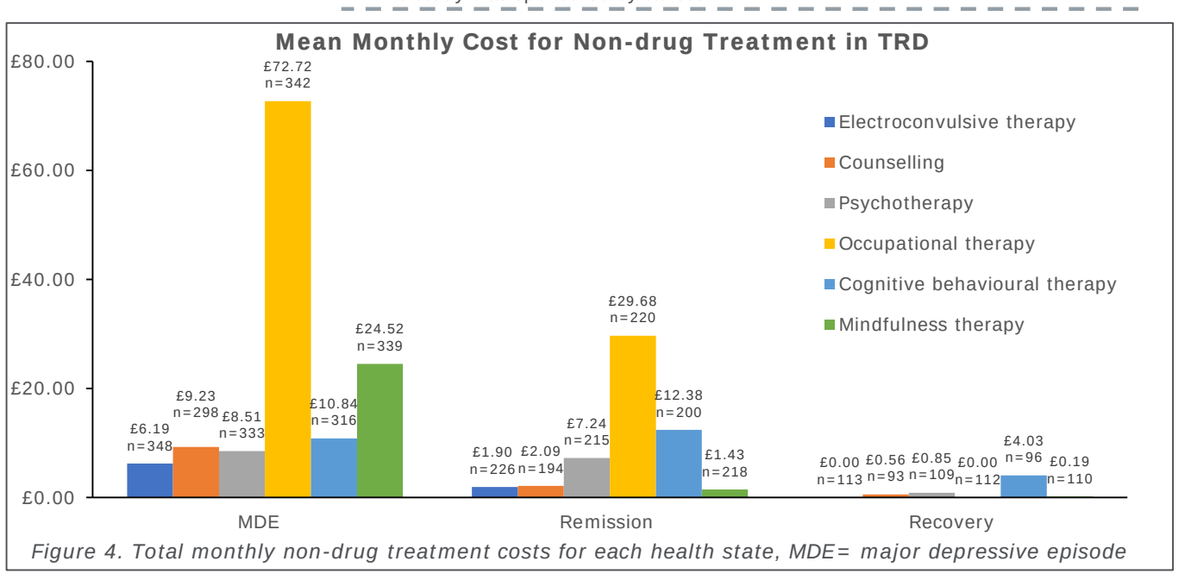

Figure 4. Total monthly non-drug treatment costs for each health state, MDE= major depressive episode

Drug treatment costs

- The greatest monthly cost was observed in the remission (£106.83) health state (**Figure 5**).

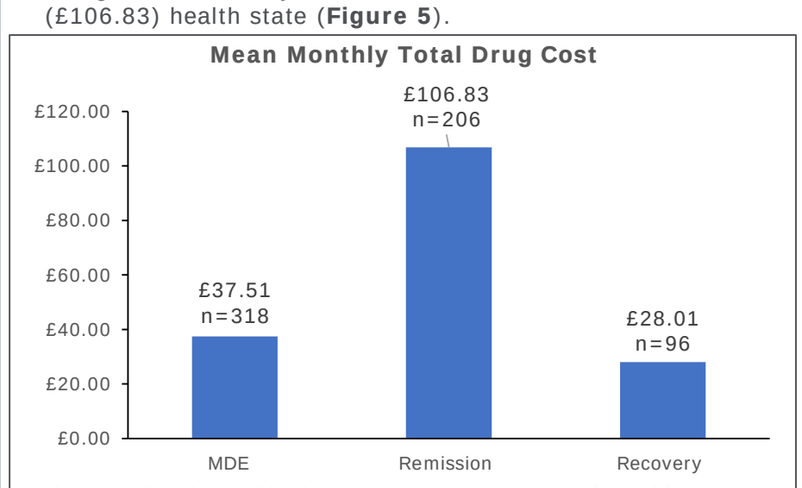

Figure 5. Total monthly drug treatment costs for each health state, MDE= major depressive episode

Hospitalisation and CRHTT costs

- The average monthly cost of hospitalisations was the greatest for patients in MDE (£380.18), (**Figure 6**). This cost reduced for patients in remission (£42.42) and recovery (£11.93).
- The average monthly cost of CRHTT is considerable in the MDE clinical state (£326.31). The cost is much lower in the remission (£18.09) and recovery (£18.43) clinical states.

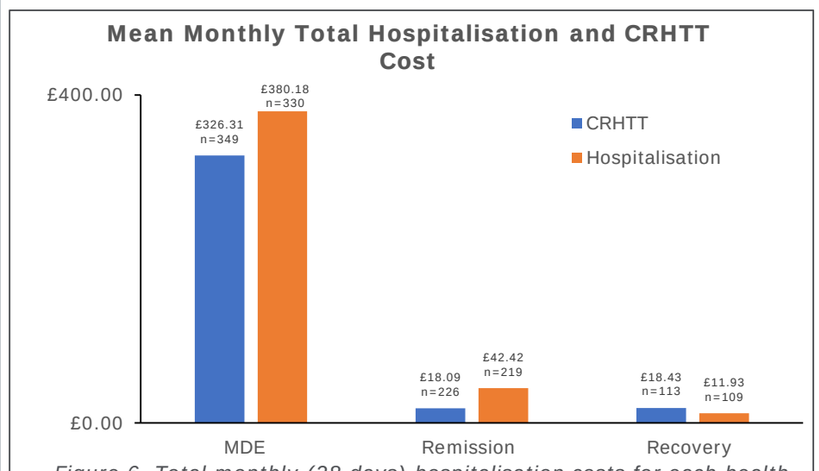

Figure 6. Total monthly (28 days) hospitalisation costs for each health state, MDE= major depressive episode

CONCLUSIONS

- The higher costs of the MDE health state was primarily driven by the increased costs of CRHTT and hospitalisations, demonstrating the cost burden of treating patients with TRD due to the current lack of an effective treatment option for these patients.
- While there is an increased HCRU cost associated with patients with TRD compared to non-TRD patients, this study demonstrated the substantial differences in cost between patients with TRD in different health states, with patients in remission and recovery having a much lower cost associated with their disease management, when compared with that for patients with TRD in a MDE health state.
- The costs associated with a MDE health state highlights the need for an effective therapy that can quickly reduce depressive symptoms and bring more patients with TRD to remission and recovery, which is associated with less overall HCRU and associated costs.

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DISCLOSURES

This study was sponsored by Janssen