

Research Letter

Problems in Medication Self-Management by Elderly Patients

Responses to a Questionnaire in the ABLYMED Study

Despite the complexity of pharmacotherapy in elderly patients, correct administration of medication is crucial for achieving the goals of treatment. Age-related limitations have the potential to compromise medication adherence. The aim of our subanalysis of data from the ABLYMED (Ability To Self-Administer Medication in Non-Demented In-Hospital Patients) study was to identify by means of a survey problems in medication administration

and the frequency of their occurrence in elderly patients who self-manage their medication, and to assess how relevant these problems are for the safety of drug therapy.

Methods

We analyzed data from the ABLYMED study (Heinrich Heine University of Düsseldorf ethics committee approval 2021–1435;

TABLE

Questionnaire for the assessment of subjective medication management abilities*

Questionnaire item/topic area/(number of patients who responded to the question or who have been using the respective dosage form [category A handling])	Response frequency (%)
Adherence, self-developed questions	
Have you ever run out of your medications? (100)	yes / no 11 / 89
Have you ever mixed up your medications? (100)	2 / 98
Do you use any technological aids to remind you to take your medications? (99)	8 / 92
Do you wish to be reminded to take your medication? (99)	19 / 81
Does someone remind you to take your medications every day (99)	24 / 76
How do you best recognize your medications? (88) (multiple items possible)	
Appearance 33 / 67	33 / 67
Name 45 / 55	45 / 55
Packaging 49 / 51	49 / 51
Do you have problems with switching manufacturers? (88)	50 / 50
Do you have a complete medication schedule from your primary care physician? (100)	80 / 20
Are you tolerating your medication? (100)	yes / moderately well/ no 97 / 2 / 1
Adherence, MARS-D	
I forget to take it (99)	always/ often / sometimes / rarely / never 1 / 0 / 7 / 29 / 63
I alter the dose (99)	0 / 1 / 7 / 3 / 89
I stop taking it for a while (99)	0 / 0 / 3 / 2 / 95
I miss out a dose (99)	0 / 1 / 12 / 7 / 80
I take less than instructed (99)	0 / 1 / 5 / 6 / 88
Handling, self-developed questions	
Do you have problems with: opening packages? (100)	yes / no 37 / 63
your inhaler? (18)	11 / 89
patches? (2)	0 / 100
eye drops? (24)	33 / 67
pens? (22)	0 / 100
drops? (7)	43 / 57
with dividing tablets? (44)	16 / 84
Do you need any improper aids to use your medications? (75)	32 / 68
Belief/attitude/knowledge, self-developed questions	
Do you feel like your medication changes too often? (99)	yes / moderately / no 5 / 7 / 88
Do you have the impression that you have to take too many medications? (99)	yes / in some cases / no 37 / 14 / 49
Do you read the package insert? (100)	34 / 27 / 39
Do you understand the package insert? (83)	58 / 28 / 14
Do you know why you were prescribed your medications? (100)	58 / 33 / 9
Do you think that all medications you have been prescribed help you? (100)	80 / 11 / 9

* Shown are topic areas; relevance for safety of medication use assessed by 2 experienced investigators

■ A = very relevant; ■ B = likely relevant; ■ C = less relevant; as well as response frequencies of the patients participating in the study

participants consented in writing) that prospectively recruited 100 inpatients of the University Hospital of Düsseldorf (≥ 70 years of age; ≥ 5 different drugs, medication self-management). The aim of the ABLYMED study is to develop a tool for the assessment of medication management abilities (MMAs) (1). This tool may include subjective, patient-assessed MMAs (Medication Adherence Report Scale, German [MARS-D] and self-developed questions which are considered in this subanalysis. It also may include objective, investigator-assessed MMAs (Medication Management Instrument for Deficiencies in the Elderly [MedMaIDE]) (2) and video recorded medication self-administration (3).

A questionnaire was designed through a Delphi process to collect data on subjective MMAs. This questionnaire consists of 30 questions grouped into adherence (16 questions, including 5 MARS-D [score from 0–25, 25 = fully adherent, < 25 = not fully adherent (4)]), belief/attitude/knowledge (6 questions), and handling (8 questions). Two independent investigators (HF/JG) assessed these questions with regard to their relevance for safety of medication use as very relevant (A), probably relevant (B) or less relevant (C); any discrepancies were discussed in a subject-related dialogue. Category A questions indicate an immediate risk if the medication is not administered correctly. Category B questions result in a medium risk, are considered likely to be relevant because they can lead to problems. Category C questions cause a potential risk and are considered less relevant. In order to characterize the sample, the survey collected information about the extent of comorbidities (Charlson Comorbidity Index) and the complexity of the medication (Medication Complexity Score, German [MRCI-D, ≥ 11.25 = complex medication]) (1).

Results

100 patients aged 79 ± 6 years ($M \pm SD$) were included. The median (Q1; Q3) Charlson Comorbidity Index score was 2 (1; 3), the mean number of medications taken was 9 ± 3 . Medication complexity was high (mean MRCI-D score, 19 ± 8) and 81% exceeded the threshold for complex medication. The Table shows the structure of our questionnaire by topic area, relevance to drug therapy safety, and response frequencies. In the Category A questions, forgetting to take medications was the most common aspect of non-adherence. Overall, 55% were not fully adherent, 11% occasionally ran out of medication, and 2% mixed up medications. Handling problems were mainly associated with drops (43%), tablet packaging (37%) and eye drops (33%). After dichotomizing categories A-C into A (very relevant) versus B or C (probably/less relevant), Cohen's kappa, as a measure of interrater reliability, was 0.852 ($p < 0.001$).

Discussion

The key finding of this explorative study is that in our sample patients with medication self-management have reported problems mainly related to medication adherence and handling that are very relevant for treatment safety. Thus, it would be possible to efficiently identify patients at risk for non-adherence. So far, validated questionnaires that comprehensively assess medication adherence problems are lacking. The validated MARS-D consists

of five questions on self-perceived adherence across all medications. Developed and validated based on a small patient sample, the MedMaIDE covers MMAs by having an investigator collect information on MMAs through interviewing/behavioral observation. In this study, we developed the questionnaire on subjective MMAs described above and, in addition to the German translation of the MedMaIDE, we designed a method to objectively assess MMAs by standardized medication administration of various dosage forms to address the gap in the assessment of MMAs (1, 3). In future studies, relationships between subjective and objective MMAs will be analyzed, and the developed measures will be validated by means of a telephone follow-up covering negative health outcomes. Following the ABLYMED study—designed with a small sample size and a wide range of assessments—the developed measures need to be validated and then applied in independent cohorts.

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Conflict of interest statement

The authors declare no conflict of interest.

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