



## An evaluation of pharmacist knowledge on treatment with antiepileptic drugs



Yifat Roth<sup>a</sup>, Miri Y. Neufeld<sup>b</sup>, Ilan Blatt<sup>c</sup>, Shiri Guy-Alfandary<sup>d</sup>, Sivan Rasaby<sup>e</sup>, Dana Ekstein<sup>f,\*\*</sup>, Sara Eyal<sup>a,\*</sup>

<sup>a</sup> Division of Clinical Pharmacy, School of Pharmacy, The Hebrew University of Jerusalem, Jerusalem, Israel

<sup>b</sup> EEG and Epilepsy Unit, Department of Neurology, Tel-Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

<sup>c</sup> Department of Neurology, Sheba Medical Center, Tel Hashomer, Israel

<sup>d</sup> Clinical Pharmacy Unit, Maccabi HMO, Modiin, Israel

<sup>e</sup> Shalvata Medical Center, Clalit Health Services, Hod Hasharon, Israel

<sup>f</sup> Department of Neurology, the Agnes Ginges Center of Neurogenetics, Hadassah-Hebrew University Medical Center, Ein Kerem, Jerusalem, 91120, Israel

### ARTICLE INFO

#### Article history:

Received 12 October 2015

Received in revised form 22 November 2015

Accepted 24 November 2015

#### Keywords:

Antiepileptic drugs  
Interactions  
Women's health  
Pharmacists  
Knowledge  
Questionnaires

### ABSTRACT

**Purpose:** As pharmacists play an important role in managing antiepileptic drug (AED) therapy, they should be aware of different aspects of the treatment. Our aim was to evaluate pharmacists' knowledge of the pharmacological treatment of epilepsy, and their recommendations under hypothetical situations, through a written questionnaire.

**Methods:** The questionnaire included 22 questions divided into three sections: demographic data (eight questions), knowledge of specific aspects of AED therapy (true/false; four questions), and actions taken in theoretical situations involving AED therapy (multiple choice; ten questions). The questionnaire was distributed to pharmacists practicing in Israel and working in pharmacies and/or participating in professional meetings and continued education programs.

**Results:** One hundred and twenty one pharmacists completed the questionnaire (response rate 19%). The mean overall score was  $48 \pm 15\%$  correct answers. Most pharmacists were aware of the need to continue AED treatment during pregnancy, the risk of generic switches, and the need to call the physician for loss of seizure control (92%, 89% and 81% of responders, respectively). Twelve percent identified correctly all three situations in which the clinicians should be contacted urgently, and 27% did not identify any of them. The total score was related to the academic degree (PharmD vs. other) and to the duration since training completion.

**Conclusion:** Pharmacists were knowledgeable regarding some aspects of care of people with epilepsy. However, our study, as in previous studies among health care professionals, identified some gaps in knowledge. These findings indicate the need for better education of pharmacists regarding epilepsy and its treatment.

© 2015 British Epilepsy Association. Published by Elsevier Ltd. All rights reserved.

## 1. Introduction

Antiepileptic drugs (AEDs) are the essence of epilepsy treatment, and 70–80% of adults with new onset epilepsy may become seizure free with optimal AED therapy [1,2]. However, up

to half of the patients treated with AEDs experience adverse effects [2,3] and 20–30% are drug resistant [4,5]. In addition, sometimes more than one AED is required in order to control seizures, and patients may be treated for concomitant diseases. This may lead to drug–drug interactions [6,7]. The medical treatment of people with epilepsy (PWE) is even further complicated by the fact that certain subpopulations, such as women of childbearing age and patients of Asian origin, present very specific considerations [8,9]. Accordingly, a survey among PWE attending a tertiary referral epilepsy outpatient clinic indicated that patients know more about epilepsy in general than about their own condition [10]. All of these issues may have a substantial influence on the control of seizures and on patients' quality of life, and therefore should be well recognized by healthcare providers.

\* Corresponding author at: Institute for Drug Research, Room 613, School of Pharmacy, Faculty of Medicine, The Hebrew University of Jerusalem, Ein Kerem, Jerusalem, 91120, Israel. Tel.: +972 2 675 8667; fax: +972 2 675 7246.

\*\* Corresponding author. Tel.: +972 2 6777741; fax: +972 2 6777624.

E-mail addresses: [yifat.harif@mail.huji.ac.il](mailto:yifat.harif@mail.huji.ac.il) (Y. Roth), [mirin@tlvmc.gov.il](mailto:mirin@tlvmc.gov.il) (M.Y. Neufeld), [Ilan.Blatt@sheba.health.gov.il](mailto:Ilan.Blatt@sheba.health.gov.il) (I. Blatt), [guy\\_s@mac.org.il](mailto:guy_s@mac.org.il) (S. Guy-Alfandary), [sivan.rasaby@mail.huji.ac.il](mailto:sivan.rasaby@mail.huji.ac.il) (S. Rasaby), [dekstein@hadassah.org.il](mailto:dekstein@hadassah.org.il) (D. Ekstein), [sarae@ekmd.huji.ac.il](mailto:sarae@ekmd.huji.ac.il) (S. Eyal).

Pharmacists play a key role in the therapeutic management of PWE. Pharmacists have the opportunity to prevent drug-related untoward occurrences, by representing the last barrier between the patient and the drug. They can verify that the dose is reasonable; warn prescribing physicians regarding potential drug–drug interactions; and give patients essential drug information, such as information regarding possible drug-related adverse events [11–13]. Moreover, a survey among PWE indicated that patients most commonly consult their pharmacist with regard to drug interactions and adverse effect information [13]. This clearly indicates the need for pharmacists to be knowledgeable regarding epilepsy and its treatment. However, previous research indicated that pharmacists' acquaintance with specific areas of AED prescription and utilization, i.e., women's health [14] and generic drug substitution [15], is lacking. These findings are along the same line of evidence with data showing that even neurologists treating epilepsy patients are not continuously updated with regard to AED treatment [16].

The aim of this study was to evaluate pharmacists' knowledge regarding the use of AEDs, and their recommendations based on this knowledge, through a written questionnaire. We were also interested in identifying the impact of demographic variables on pharmacists' knowledge. The survey included pharmacists with various levels of formal education and experience.

## 2. Methods

### 2.1. Ethics approval

The study protocol was approved and a waiver of consent granted by the Institutional Review Board at the Hadassah-Hebrew University Medical Center, Protocol No. 0486-13-HMO. The questionnaire was filled anonymously and data were saved without identifying details.

### 2.2. Participants

Participants in the study were licensed pharmacists, certified by the Israeli Ministry of Health, who understand and speak Hebrew and who were willing to answer a 22-item questionnaire. Pharmacists who already completed the questionnaire in another setting, pharmacist assistants, undergraduate students and trainees who were not licensed at the time of the study were excluded. Enrollment began on December 2013 and ended on June 2014.

### 2.3. The questionnaire

The questionnaire (supplementary information) included three types of questions: A. Questions aimed to collect demographic data; B. A true/false format of questions assessing AED-related knowledge ( $n = 4$ ); C. A single-response, multiple-choice format of questions listing pharmacists' possible actions in theoretical situations involving AED therapy ( $n = 10$ ). Parts B and C included questions regarding emergency situations ( $n = 3$ ), women's health ( $n = 3$ ) and drug–drug interactions ( $n = 5$ ), along with miscellaneous topics (generic switches, lamotrigine's initial dose, and interpretation of valproic acid blood concentration;  $n = 3$ ). Two questions were included in similar studies that had taken place in the United States [14,15,17]. Parts B and C questions were followed by sections entitled "comments", each including two empty lines.

The initial version of the questionnaire was composed by three of the authors of this work (YR, DE, SE) and was changed to the final form after revision for content validity and clarity by two epileptologists (MYN and IB, former and current presidents of the Israeli Chapter of the International League Against Epilepsy – ILAE) and two PharmD currently practicing pharmacists (SG and

SR). For validating that the subjects do not provide arbitrary answers, one difficult true/false question (urinary retention is an adverse effect that may require the use of a catheter in patients that are taking rufinamide – correct answer: false – this being an adverse event of retigabine) was presented in part B of the questionnaire and was not included in the final analysis. As expected, only 21 participants (10%) gave a correct answer to this question and 98 (81%) noted that they did not know the correct answer. Following comments from the participants, the two answers suggesting not dispensing the drugs and calling the physician in response to each of the three emergency situations in part B (three questions in total) were both considered correct (see supplementary information).

### 2.4. Data collection

Following permission granted from the relevant administrative personnel in charge, the questionnaire was presented to pharmacists in one of the following four settings: (1) Pharmacists working in drugstores of Super-Pharm, the largest drugstore chain in Israel, were approached in 9 out of 12 stores in Jerusalem during working hours. The questionnaire forms were collected 2–7 days later; (2) Maccabi Health Maintenance Organization's (HMO) pharmacists were approached, during a training course unrelated to epilepsy or AEDs. Pharmacists were allowed 15 min to complete the questionnaire; (3) The forms were distributed to pharmacists participating in one of two semiannual meetings of the Pharmaceutical Society of Israel (PSI). The entire meeting day was allotted to completing the questionnaire; (4) The forms were distributed to pharmacists participating in the PharmD Program of the Hebrew University School of Pharmacy. Fifteen minutes were allotted to complete the questionnaire.

Pharmacists were not supposed to consult any information resources when they were taking the quiz, and those who answered the quiz in small classes (pharmacists participating in the PharmD program or Maccabi's pharmacists) were not able to do so. We could not validate that the other pharmacists did not use information resources. No financial incentives were offered to encourage participation. However, a document containing detailed answers to the study questions was prepared and distributed among members of the organizations participating in the study.

### 2.5. Data analysis

The final score was expressed as the percentage of correct answers of each pharmacist. The option "I don't know" was considered a separate category, and included in the estimation of the score per question as a wrong answer. Responders were grouped into one of two categories of duration since graduation from training (five years or less and longer than five years) and of countries in which the BScPharm degree was obtained (Israel, other). Descriptive statistics were obtained for the various variables. Response patterns were evaluated using the two-tailed Mann–Whitney test, the Kruskal–Wallis test, and the Pearson correlation (GraphPad Instat 3, La Jolla, CA, USA), as appropriate. The results are reported as mean  $\pm$  standard deviation (SD), unless otherwise indicated. A  $p$ -value  $\leq 0.05$  was considered significant.

## 3. Results

A total of 121 pharmacists completed the questionnaire. These included 17 pharmacists out of the 59 pharmacists working in 2014 in the nine approached Super-Pharm stores in Jerusalem (29%), all 29 pharmacists who participated in Maccabi HMO's training class, 65 out of the 535 participants of the PSI conferences (5.4% of participants), and 10 PharmD students who attended a

Download English Version:

<https://daneshyari.com/en/article/340510>

Download Persian Version:

<https://daneshyari.com/article/340510>

[Daneshyari.com](https://daneshyari.com)