Saudi Pharmaceutical Journal xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Saudi Pharmaceutical Journal

journal homepage: www.sciencedirect.com

Original article

Knowledge of community pharmacists about the risks of medication use during pregnancy in central region of Saudi Arabia

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ARTICLE INFO

Article history:
Received 19 January 2017
Accepted 21 May 2017
Available online xxxx

Keywords:
Knowledge
Pregnancy
Medication usage
Community pharmacy

ABSTRACT

Background: Community pharmacists (CPs) are the most accessible health care provider to the public, and they have huge duties to improve medication use especially among the pregnant women in their community. The objective of this study was to evaluate knowledge of CPs about the medication safety during pregnancy.

Methods: A prospective cross-sectional survey was carried out over practicing community pharmacists in a capital of Saudi Arabia (SA). Pharmacists were asked about the safety of each medicine during pregnancy. It involved both prescription-only medications (POM) and over-the-counter (OTC) medications. Both descriptive and analytic statistics were utilized. For descriptive analysis, results were expressed as numbers, percentages and mean (±SD and 95% CI).

Results: The response rate was (71.1%). Most of the respondents (69.6%) believed that alprazolam is not safe while 22% of respondents believed that it is used on basis of risk-benefit assessment. Also, most of CPs (65.2%) said that amoxicillin is safe, but a very few of CPs (11.7%) knew that tetracycline should be used only if potential benefits may outweigh the risk. Among non-prescribed analgesics, majority of CPs (92.6%) knew that acetaminophen is safe. About dietary supplements, 48.4% of CPs reported that Vitamin A supplements are not safe. There was significant difference observed between age groups of CPs in scores of knowledge test (P = 0.001).

Conclusion: Community Pharmacists are the most accessible health care providers who can help pregnant women with their medications use there are still gaps in knowledge where educational interventions are needed.

1. Introduction

Drug therapy in pregnant women cannot be completely avoided because some pregnant women may have acute or chronic diseases such as nausea, vomiting, diabetes, asthma and hypertension in which short or long-term therapy are needed (Zaki and Albarraq, 2014). In Saudi Arabia (SA), it is reported that 40% of pregnant women take either prescribed or over-the-counter (OTC) medications (Zaki and Albarraq, 2014). Moreover, it is estimated that herbal medicine use in pregnant women range between 7% and 55% in different geographical areas of Middle East (John and Shantakumari, 2015). Frequently used medications, herbs, and complements can result in adverse outcomes for both the mother and her fetus (Arah, 2012; Bercaw et al., 2010).

To avoid such adverse events, pregnant women should be educated from health care professionals including physicians and pharmacists. A study carried out in Saudi Arabia reported that pregnant women received drug information from pamphlet than either physicians or pharmacists (Zaki and Albarraq, 2014). Another study was conducted in Riyadh city, SA to evaluate the knowledge, attitudes, beliefs, and factors associated with the uptake of the influenza vaccination in pregnant women. The study revealed that the knowledge of the influenza vaccine amongst Saudi pregnant women was low and very few of pregnant women (13%) thought that the flu vaccine is safe during pregnancy and

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Peer review under responsibility of King Saud University.

Production and hosting by Elsevier

http://dx.doi.org/10.1016/j.jsps.2017.05.005
1319-0164/

Please cite this article in press as: Alrabiah, Z., et al. Knowledge of community pharmacists about the risks of medication use during pregnancy in central region of Saudi Arabia. Saudi Pharmaceutical Journal (2017), http://dx.doi.org/10.1016/j.jsps.2017.05.005

seldom, health care professionals advise their patients to take flu vaccine (Mayet et al., 2017).

Community pharmacists (CPs) are the most accessible health care providers to the general public. In addition to their traditional role of dispensing medications and treating minor illnesses, CPs are considered a direct source of drug information for the public. They play important role in monitoring drug use in pregnant women. Therefore, CPs should have enough medication knowledge to improve therapy for the patients. Also, they should provide medication counseling, drug information, medication assessments and medication adherence (George, 2011). In Saudi Arabia, many studies have published related to community pharmacy practice. A study was carried out by Garcia-Bournissen et al. to assess the counseling practice of CPs in Riyadh city, SA. This study revealed that the most current CPs don't provide appropriate medication counseling (Garcia-Bournissen et al., 2008). Another cross- sectional study was carried among 100 CPs to explore the competence of CPs in monitoring drug-drug interactions, the degree of adherence to pharmacy regulations and the extent to which community pharmacists engage in patients counseling. This study reported that about 95% pharmacists don't adhere to the profession regulation act related to antibiotic dispensing and a few of CPs provide patient counseling (Al-Hassan, 2011).

A cross-sectional study was conducted in Tanzania among CPs to evaluate their knowledge towards drug use in pregnancy. It focused on four commonly used drugs that are teratogenic or cause undesirable effects to the fetus. This study reported that CPs had insufficient knowledge regarding these medications (Kamuhabwa and Jalal, 2011). A similar study was done in Brazil to assess pharmacists' knowledge and attitude towards dispensing drugs to pregnant women. It suggested that pharmacists who dispense these drugs were not able to interpret information on the use of drugs in pregnant women (Baldon et al., 2006).

To the best of our knowledge, no studies were published to assess community pharmacists' (CPs') knowledge towards medication safety during pregnancy. Such study is necessary since CP are the most accessible health care provider to the public, and they have huge duties to improve medication use especially among the pregnant women in their community. The objective of this study was to evaluate knowledge of CPs about the medication safety during pregnancy.

2. Methods

2.1. Study design

A prospective cross-sectional survey was carried out in Riyadh city, SA. The questionnaire was confirmed for its face and content validity by experts in the field of clinical pharmacy and adjusted after a pilot study conducted on 10 CPs. The reliability of questionnaire was determined to be 0.865 using the Cronbach's Alpha. Ethical approval was obtained from The King Saud University's institutional review board before data collection. The questions used in the tool had been established based on similar previously published studies (Morgan et al., 2010).

2.2. Questionnaire design

The questionnaire composed of two main parts. The first part is the demographic survey to collect background information regarding the age, number of working years' experience in the field of pharmacy, graduation country, and practice asking female patients about the pregnancy status. The second part comprised of a list of 22 prescription drugs, nonprescription drugs, dietary complements, and herbal medicine when they are taken in the first trimester. Pharmacists were asked about the safety of each medicine during pregnancy. It involved both prescription-only medications (POM) and over-the-counter (OTC) medications. Each question in both section would only have one of the following answers: safe in the first trimester, must weight risks and benefits for individual patients, not safe in the first trimester, and I don't know. The selected medications in the survey included: (1) drugs which have known risks to the fetus including isotretinoin, phenobarbital, tetracycline, valproic acid; (2) drugs that are commonly used for gynecological health issues including ciprofloxacin, amoxicillin, oral contraceptives; (3) drugs that are used to treat other health issues that can be present during pregnancy such as paroxetine for depression; budesonide for asthma; lamotrigine for epilepsy and bipolar disorder; (4) OTC medications that are most commonly used during pregnancy involving acetaminophen, aspirin, dextromethorphan, guaifenesin, ibuprofen, and pseudoephedrine. All the correct answer for both prescription only medications (POM) and over the counter medications (OTC). The overall knowledge scores was calculated by adding all the correct answer for knowledge questionnaire and the maximum score was 22.

2.3. Study population

The study was targeted all practicing community pharmacists in Riyadh city, SA. It was estimated that about 2000 pharmacists registered with the health affairs directorate in Riyadh city. To calculate the sample size, we assumed 50% of the pharmacists have good knowledge about drug safety during pregnant women, and a total of 350 pharmacies would provide a representative sample size with 5% margin of errors and 95% confidence level.

2.4. Data analysis

The data was entered into the SPSS version 22 for Windows (SPSS) for analysis. Both descriptive and analytic statistics were utilized. For descriptive analysis, results were expressed as numbers, percentages and mean (±SD and 95% CI). The Mann- Whitney *U* test and the Kruskal-Wallis test were used to assess intergroup differences. P-value of less than 0.05 was consider as statistically significant.

3. Results

Responses were returned from 350 CPs given a response rate of 71.1%. Demographic characteristics of the participants are showed in Table 1. The age of approximately 71.5% of the study sample ranges from 25 to 35 years. About 94.9% of the participants have less than 10 years working experience in the field of pharmacy.

Table 1
Demographic characteristics of the participants (N = 256).

Age	Frequency	Percentage (%)
From 25 to 35	183	71.5
From 36 to 45	70	27.3
From 46 to 55	3	1.2
Years of working experience		
Less than 10 years	243	94.9
From 20 to 30 years	11	4.3
From 31 to 40	–	–
Asking for pregnancy status		
Always	140	54.7
Often	98	38.3
If she looks pregnant	17	6.6
Never	1	0.4

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