Use of Herbal Medicine among Pregnant Women Referring to Valiasr Hospital in Kazeroon, Fars, South of Iran

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Receive: 27 Sep. 2010 **Acceptance:** 6 Mar. 2011

Abstract

Background: The increase in the use of herbal products is noticed all over the world. The safety of herbal drugs becomes particularly important in pregnant women and children. Despite the fact that available data are insufficient to justify herbal use during pregnancy, exposure to herbal products is frequent in these subjects. Some of the more complex reasons for preference of herbal medicine are associated with cultural and personal beliefs and philosophical views toward life and health. The present study was conducted to evaluate drug utilization pattern during pregnancy in Kazeroon, south of Iran.

Methods: In all, 530 women fulfilling study inclusion criteria were interviewed at the postnatal ward of Valiasr hospital in Kazeroon, from September to October 2009.

Results: In all, 158 out of the 513 women (30.8%) had used herbal drugs during pregnancy. The most commonly used herbs in pregnancy in this study were Ammi, Saatar and Sweet Basil. The most usuall period of using herbal drugs was throughout the first trimester of pregnancy. There was no statistical difference between women using and those not using herbal drugs in pregnancy. In most instances, the women reported to have been recommended herbal drug use by family (87.3%).

Conclusion: In spite of the fact that side effects and teratogenic potentials of most herbal products are poorly understood, indiscriminate use of herbal remedies in different forms is very rampant. Pregnancy care providers should be aware of the common herbal supplements used by women, and of the evidence regarding potential benefits or harm.

Keywords: Herbal medicine, Pregnancy

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[DOR: 20.1001.1.2717204.2011.10.37.11.2]

Introduction

The increase in the use of natural health products, particularly herbal products, is noticed all over the world. Herbal medicines are preparations derived from naturally occurring plants with medicinal or preventive properties [1]. The inclusion of herbal medicines within the definition of Complementary and Alternative Medicine (CAM) may actually give the impression that they are harmless and can be used without any precautions. However, herbal drugs have the potential to elicit the same types of adverse reactions as synthetic drugs, since they consist of the whole extracts or, more commonly, of defined parts of plants (roots, rhizomes, leaves, and flowering heads) that contain numerous active molecules [2]. Moreover, in most countries herbs are sold as unlicensed food supplements or are available to consumers as over-the-counter items in various preparations not regulated with the same scrutiny as conventional drugs, with risks of contamination or adulteration with poisonous metals, non-declared herbs or conventional medicines [3]. While herbal therapy is labeled as a reference therapy in Africa, it coexists in other countries like Canada, with conventional pharmacological therapy [2]. In fact, an increasing number of health professionals suggest over-counter and natural health products to their patients [4]. There is substantial evidence, indicating that up to 50% of the general population have tried at least one herbal product [5 - 8]. The safety of herbal drugs becomes particularly important in some subpopulations of patients such as pregnant women and children, who are more vulnerable to the effects of drugs as well as of natural products for their physiological characteristics. Despite the fact that available data are insufficient to justify herbal use during pregnancy and in pediatrics, exposure to herbal products is frequent in these subjects [4, 9], often on a self-treatment basis [10, 11]. The actual incidence of this use is unknown, even if it has been reported by some authors as varying between 7 and 45% depending on geographical area [12-16]. The use of herbal drugs is widespread in countries like India and China, and in large parts of Asia, South America and Africa. The use of herbal drugs is increasing also in western countries [5]. Some of the more complex reasons for preference of herbal medicines are associated with cultural and personal beliefs, philosophical views on life and health [17], as well as comparison of experiences between conventional healthcare professionals and complementary medicine practitioners [18] by patients. Less research has been published about the motivations for this use. A Canadian interview study including 27 purposefully selected pregnant women found that the women considered herbs to be safer than pharmaceuticals because they were “milder”, “more natural”, “simpler, more familiar” or “caused fewer side effects” [19].

An Italian survey among 1420 women showed that herbal use was increasing and that the women considered the herbal products to be an important and effective way to promote health and well-being and to manage disease as well as being safer overall than conventional drugs [20]. Thus, the main reason for herb use seems to be the safety aspect – herbs are considered to be safer than pharmaceuticals. In fact, while pregnant women recognize the potential risks of drug consumption, they do not realize that herbal products, if taken incorrectly, could also be toxic. This derives from the implicit belief that herbal remedies, being natural, are necessarily safe [21]. Knowledge of potential side effects of many herbal medicines in pregnancy is

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limited [22 - 25], and some herbal Products may be teratogenic in human and animal models [26 - 29], so the Medicines and Healthcare products Regulatory Agency (MHRA) identifies patients who are pregnant, breastfeeding, children or elderly as particularly at risk from the use of herbal medicines as they are generally untested within these population [30]. Based on this information it is recommended to avoid herbal products during pregnancy. In spite of this, many women use herbal products during pregnancy and it is important to find out more about why data on the extent of women's use of herbal medicines during pregnancy is scanty in Iran. We could not find many studies demonstrating the drug utilization pattern in pregnant women in Iran. To our knowledge, only one study has been carried out in Iran to evaluate the use of herbal medicines among pregnant women in Shahr-e-kord, According to this study, 51.9% of women had used herbal medicine [31]. Hence, the present study was conducted to evaluate the drug utilization pattern during pregnancy in Kazeroon, south of Iran.

Materials and Methods

A cross-sectional survey design was used. The study was conducted at Valiasr hospital in Kazeroon, Fars, south of Iran, which is the only hospital in this city. There are approximately 5,000 births per year at this hospital. We sought to recruit approximately 10% of the population of women going through Valiasr hospital each year, which were 500 women.

In all, 530 women fulfilling study inclusion criteria were interviewed within 2 days after childbirth at the postnatal ward from September to October 2009. Only women from Kazeroon and the country were included in the study, because different groups may have different practices in the use of herbal medicine. Women with a child in the intensive care unit and those who were ill at the time of recruitment were excluded from the study to avoid an extra burden on the women. 10 specific herbs were considered to decrease of recall bias.

The Regional Ethics Committee approved the study. The women received oral information about the study. The women were informed that all the information collected was stored anonymously, and that no prior knowledge was required to participate in the study. The participants were explained the definition of herbal drugs in the introduction to the study interview. Herbal drugs were defined as all types of products (oral and dermal) that were manufactured from herbs or contained herbs as the major component. It was also required that the herbs were used to obtain better health. Verbal informed consents were obtained from women who agreed to participate after the study had been explained to them.

Data were collected through a face-to-face interview carried out by a specially trained midwife on the basis of a structured questionnaire which was piloted using a sample of women chosen from the antenatal wards, which were not part of the final study to ensure the content validity and clarity. The instrument was further refined and the final version included socio-demographic information (age, the number of prior pregnancies, education level, job and place of living that is urban or rural) and 29 items on the herbal product taken (timing, duration, reason for consumption, form of use, source of information, the use of all prescription and nonprescription medications including herbal remedies during pregnancy) were noted. Each interview lasted approximately 20 min.

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Statistical analysis was performed using SPSS software (SPSS Inc., Chicago, IL, USA). The results were analyzed using appropriate descriptive statistics; χ^2 and Fisher's tests were used for categorical variables. A p value <0.05 was considered as significant.

Results

There were 530 women eligible for the study. Ten women declined participation and 7 were missed during the clinic due to scheduled activities. The final sample size was 513, so the response rate was approximately 96.8%.In all, 289/513 (56.3%) of the women were 25 years old or younger, 154/513 (30.0%) were between 26 and 30 years old, 50/513 (9.7%) were between 31 and 35 years old, and 20/513 (3.9%) were 36 years or older. Most women were primipara (300/513, 58.5%), the remaining (213/513, 41.5%) had one or more children. In total, 326/513 (63.5%) had 8 years or less education, 129/513 (25.1%) had 9-12 years of education and 58/513 (11.3%) of the women had academic education. Most of the women (484/513, 94.3%) were homemaker, and 361/513 (70.4%) lived in rural regions. In all, 158 of the 513 women (30.8%) had used herbal drugs during pregnancy with a mean of 1.4 herbal products per woman (median: 1, range: 1 – 4). 21/158 (13.3%) of the herbal drug users consumed at least one prescribed medications concomitantly. 130/158 (82.3%) of the women who reported taking herbal supplements had pregnancy related reasons or other disorders, whereas in 28/158 (17.7%) women taking herbal medicines did so for males, relaxation, increase of the intelligence or beauty in the fetus. Reasons for supplement use were relatively consistent for each herbal remedy; for example Ammi and Saatar powder were used for GI Pregnancy related problem, nausea and vomiting. Figure 1 displays the most commonly reported indications for the use of herbal drugs in pregnancy. In all, 214 indications for use were reported (mean: 1.4, range: 1 – 4 indications). The most commonly reported indications (32.1%) were gastrointestinal pregnancy related problem. In total, 24 herbal products containing 18 different herbs were used. Oral powder administration was the most popular form of herbal use reported by 72 /158 women (32.5%), whereas other forms were tea form in 62 /158 women (27.9%), syrup form in 40/158 women (18.0%), boiled form in 26/158 women (11.7%), extracted form in 12/158 women (5.4%), chewing form in 8/158 women (3.6%), and topical form in 2/158 women (0.9%). The most commonly used herbs in pregnancy in this study were Ammi, Saatar and Sweet Basil. All the used herbal drugs in pregnancy are presented in Table 1. The most proportion of women using herbal drugs was throughout the first trimester of pregnancy. In all, 58/158 (36.7%) women used herbal drugs in first trimester, 24/158 (15.2%) in second trimester, 49/158 (31.0%) in third trimester and 27/158 (17.1%) any time during pregnancy.

There was no pattern of the start of the gestation, with the exception of sweet basil syrup, which was used in the third trimester for prevention of neonatal hyperbillirubinemia. Distribution of the herbs by the time of herbal medicines use in pregnancy is presented in Table 2. The characteristics of the women according to herbal drug use in pregnancy are presented in Table 3. There was no statistically significant difference between women using and women not using herbal drugs in pregnancy. In most instances, the woman reported to have been recommended herbal drug use by family (87.3%). Primary maternity care providers were rarely (7.6 %) cited as the person recommending supplement use. (Fig. 2).

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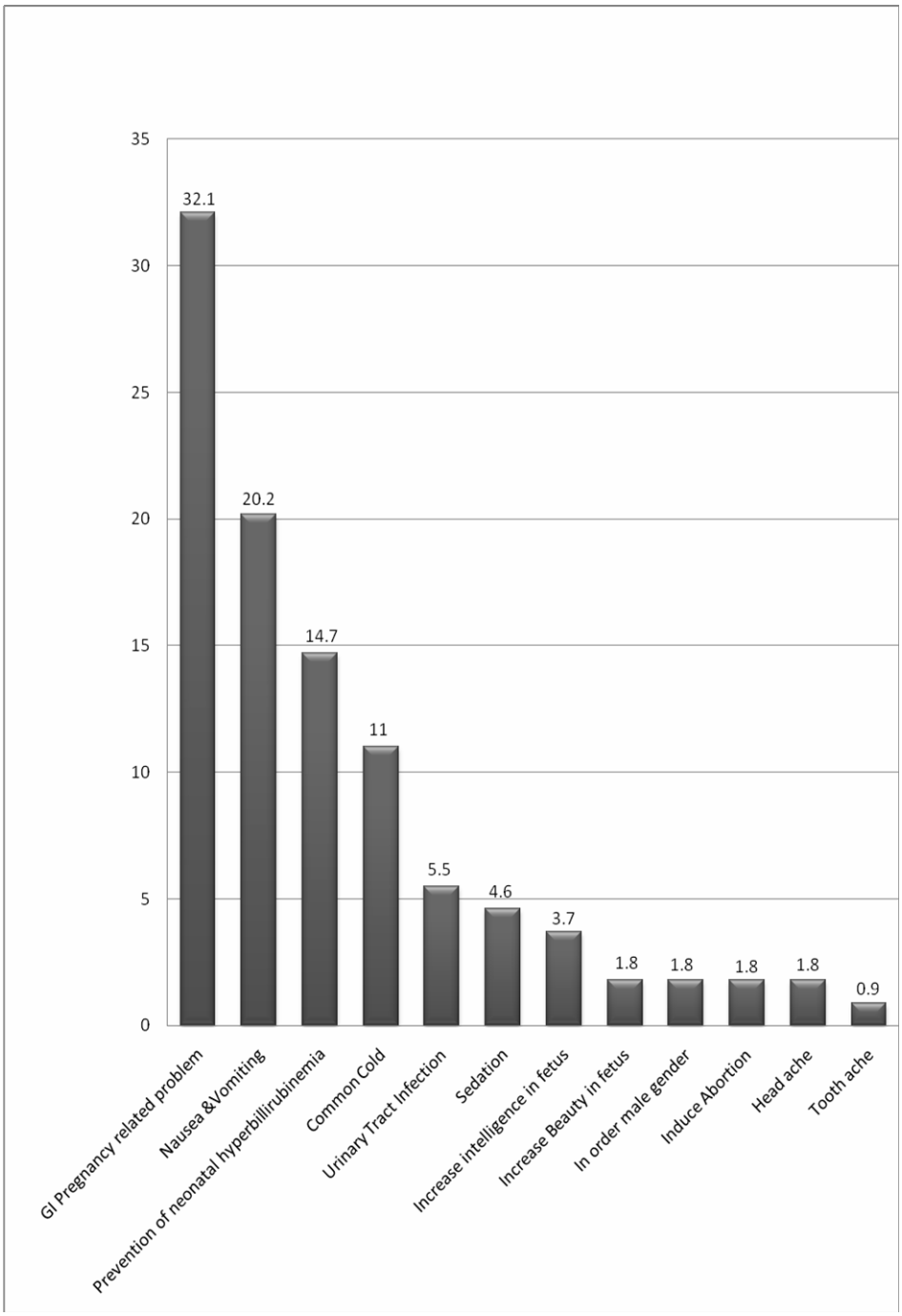

Fig. 1- The most indications for the use of herbal medicines in pregnancy

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Table 1- Most commonly used herbal medicines during pregnancy

Persian name of herb	English name of herb	Frequency*	Percent	Most common reason reported indication
Zenyan	Ammi	50	22.6	GI** Pregnancy related problem***, Nausea &Vomiting
Avishsan shirazi	Saatar	28	12.6	GI Pregnancy related problem ,Nausea &Vomiting
Tokhm-e- sharbati	Sweet Basil	28	12.6	Prevention of neonatal hyperbillirubinemia
Naana	Peppermint	20	9	GI Pregnancy related problem*,UTI****
Zangebil	Ginger	12	5.4	Nausea &Vomiting , Head ache
Darchin	Cinammon	12	5.4	In order male gender
Babooneh	Chamomille	10	4.5	Relaxation
Shirinbayan	Liquorice	8	3.6	Common Cold
Gavzaban	Borage	8	3.6	Common Cold, Constipation
Kondor	Olibanum	8	3.6	Increase intelligence in fetus
Khackshir	FLixweld	8	3.6	Prevention of neonatal hyperbillirubinemia, Common Cold
Zireh sabz	Cumin	8	3.6	Nausea &Vomiting
Zereshk	Barberry	4	1.8	Nausea &Vomiting
Onab	Jujube Tree	4	1.8	Common Cold
Zaferan	Saffron	4	1.8	Induce Abortion
Baharnarang	Sour orange	4	1.8	Increase Beauty in fetus
Paresiavashan	Maidenhair	4	1.8	Common Cold
Mikhack	Clove	2	0.9	Tooth ache
	Total	222	100	

* Some of women had used more than 1 herb
** Gastrointestinal
*** Gastritis, Heart burn, Distention, Constipation
**** Urinary Tract Infection

Table 2- Distribution of herbs by the time of herbal medicines use in pregnancy

Name of herb	1st Trimester	2nd Trimester	3rd Trimester	Any time during pregnancy	
	n*	n	n	n	Total
Ammi	17	4	12	17	50
Saatar	20	4	0	4	28
Sweet Basil	0	4	24	0	28
Peppermint	8	8	0	4	20
Ginger	4	0	0	8	12
Cinnamon	4	0	0	8	12
Chamomille	5	0	5	0	10
Liquorice	8	0	0	0	8
Borage	4	4	0	0	8

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Continue Table 2- Distribution of herbs by the time of herbal medicines use in pregnancy

Name of herb	1st Trimester	2nd Trimester	3rd Trimester	Any time during pregnancy	
	n*	n	n	n	Total
Olibanum	4	4	0	0	8
FLixweld	0	0	8	0	8
Cumin	4	4	0	0	8
Barberry	0	4	0	0	4
Jujube Tree	4	0	0	0	4
Saffron	0	0	0	4	4
Sour Orange	4	0	0	0	4
Maidenhair	4	0	0	0	4
Clove	0	0	0	2	2
Total	90	36	49	47	222

Table3 - Characteristics of pregnant women according to herbal medicines use in pregnancy

Characteristics		Proportion of women Using herbal medicines In Pregnancy (%)	Proportion of women no Using herbal medicines In Pregnancy (%)	*P* values*
Total	513(100)	158(30.8)	355(69.2)	
Age(years)		Mean:25.2±4.6	Mean:25.9±4.8	
<26	289(56.3)	103(20.1)	186(36.3)	
26-30	154(30)	34(6.6)	120(23.4)	.126
31-35	50(9.7)	13(2.5)	37(7.2)	
>36	20(3.9)	8(1.6)	12(2.3)	
Parity				
Primipara	300(58.5)	102(19.9)	198(38.6)	.062
>1 Prior child	213(41.5)	56(10.9)	157(30.6)	
Place of living				
Urban	152(29.6)	53(10.3)	99(19.3)	.195
Rural	361(70.4)	105(20.5)	256(49.9)	
Education				
<9years	326(63.6)	99(19.3)	227(44.2)	.143
9-12years	129(25.1)	35(6.8)	94(18.3)	
>12years	58(11.3)	24(4.7)	34(6.6)	
Job				
Yes	29(5.7)	8(1.6)	21(4.1)	.700
No	484(94.3)	150(29.2)	334(65.1)	

*$p<0.05$

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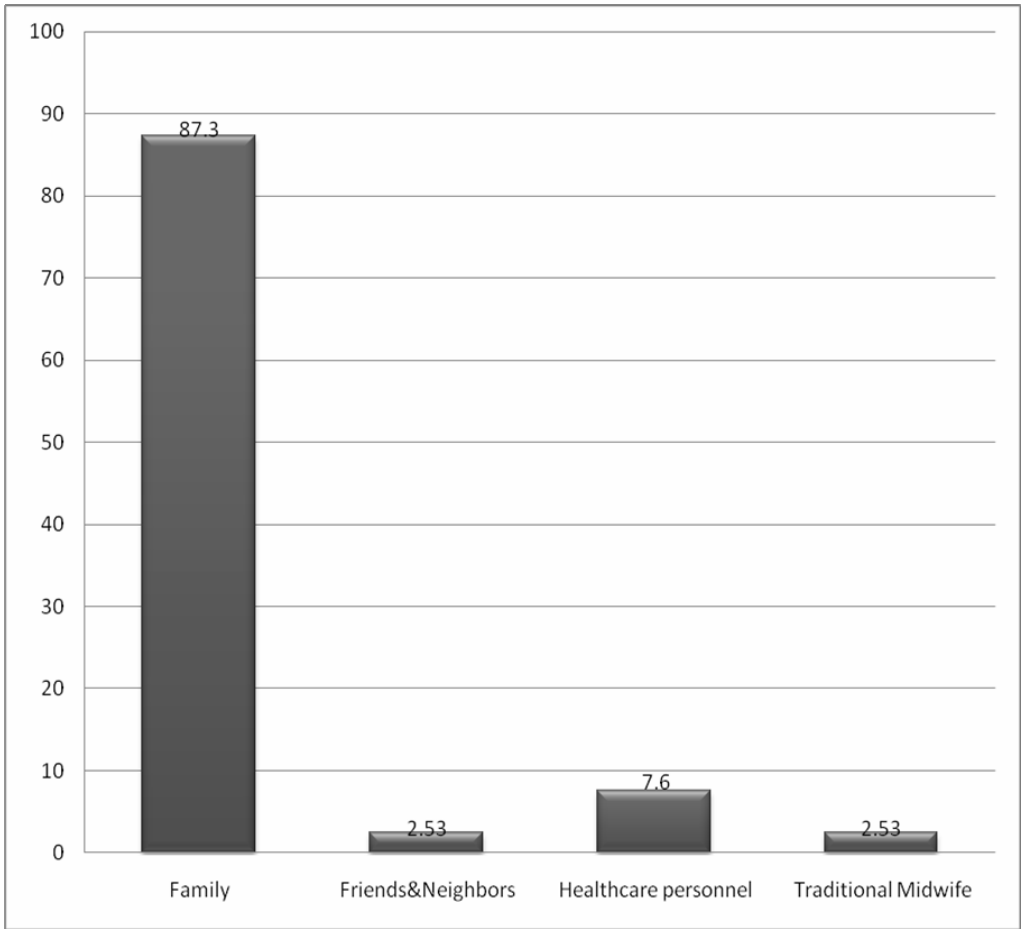

Fig. 2- Who recommended use of herbal medicines in pregnancy

Discussion

The use of herbal drugs in pregnancy among women in this study was high (30.8%) which is relatively closer to others regarding the top four mostly used herbal drugs. [14, 32-34]

The prevalence of herbal use in the other regions in Iran was higher (51.9%) [35], whereas our study results was higher than many other published studies in which the use of alternative drugs (herbal and homeopathic drugs) was between 3.6 and 15.9% [14, 25, 35, 36]. It can be explained by differences between the Iranian herbal drugs market and the situation in other countries, and differences in characteristics of the study population.

The authors of two Finnish studies emphasized, that due to the method of gathering information the use of alternative drugs in pregnancy is underestimated (3.6 and 14.0%) [36]. In the study by Tusi from 1999 to 2000 in California, USA, questionnaires were distributed among pregnant women. Among these women, 13.3% reported the use of dietary supplements in pregnancy. The response rate was so low (24%) that these results may not be representative of the study population [14].

Our study was designed specifically to investigate the use of herbal drugs in pregnancy. Interviewing each woman allowed them to ask clarifying questions, in addition,

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by naming 10 specific herbs, women might be helped to remember their use. However, we think that women tend to remember their gestational period because it is one of the most precious and important events in their life in addition to being brief which makes it easier to remember. Moreover, as the interviews were conducted 1–2 days after childbirth, and also since only women with healthy children were included in the study, this study may underestimate the use of herbal drugs in pregnancy because of recall bias.

The most commonly used herbs in pregnancy in this study were Ammi , Saatar and Sweet Basil which has not been found in previous studies and documentation of efficacy and safety in pregnancy is almost non-existing for theses herbs. This is of major concern.

In developing countries, laws regulating sales and distribution of herbal medicines are not strict while access to herbal medicines is largely unrestricted. In spite of the fact that side effects and teratogenic potentials of most herbal products are little understood, indiscriminate use of herbal remedies in different forms is very rampant.

As an example, in our study chamomile was used for relaxation. No data showing the safety of chamomile tea during pregnancy is available. Even chamomile can theoretically act as a uterine stimulant, and may cause abortion [37]. Moreover, a literature review revealed that 6% of the studies cited chamomile and peppermint as unsafe while 12% and 15% judged ginger and raspberry leaf as unsafe [38]. More importantly, some women took herbs which are potentially harmful (ginger, senna, borrage and aloe) or whose safety in pregnancy has remained unproven (Echinacea, cranberry, chamomile and lemon balm) [39].

The majority of the women who reported taking herbal supplements, said they did so for pregnancy related reasons and the others reasons were in order males, relaxation, increase in intelligence or beauty of the fetus. On one hand, some conditions that strictly do not require treatment in pregnancy could be treated with herbal drugs. Whereas one study reported that only 13% of the herbal medicine used in pregnancy was for pregnancy-related problems [32] and in another the most common reason for the use of herbal supplements was for sleep or relaxation [40].

In addition, some conditions that require pharmacological treatment in pregnancy, like UTI, were treated with herbal drugs, putting the mother and child at risk for complications. Recommending peppermint for the treatment of UTI is one example in this study. Fear of antibiotics may encourage pregnant women to choose herbal drugs as peppermint, cranberry or horsetail over traditional drugs in the treatment of UTI [32].

Pregnant women should be advised to have a restrictive attitude toward all drugs, both prescription drugs, over –the –counter (OTC) drugs and herbal drugs during pregnancy.

Most of the women using herbal drugs were throughout the first trimester of their pregnancy. This may be explained by the increase of pregnancy related problems in this period, but it should be taken in to account that drug use in the organogenesis period is very critical. Most women used herbal drugs in shorter periods, i.e. under 3 weeks. Only 30/158 (18.9%) women had continuous use, thus increasing the risk of adverse effects to the fetus.

Our results indicate that although many women considered herbal drugs, some of them significantly limited their chemical drug consumption during pregnancy. However,

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frequent commonly reported interactions between herbal medicine use and concomitant medication use can lead to undesirable effects. For example, oral contraceptives can prolong the caffeine half-life contained in green tea which may increase stimulating caffeine effects [41], and chamomile taken with the NSAIDs can enhance the risk of bleeding [42]. The widespread use of herbal drugs during pregnancy indicates an increased need for documentation about the safety of herbal drugs in pregnancy.

Family, who most commonly recommended the use of herbal drugs in this study, may not have sufficient knowledge to advise pregnant women about the use of herbal drugs. In this study, only 7.6% of the women reported to have received advice from healthcare personnel. This may indicate the disregard of consulting health care personnel about alternative therapies by pregnant woman.

When 1151 Norwegian physicians were questioned about herbal drugs, 80.7% rated their knowledge as poor [43]. Similar results have been found in England and the Netherlands [44, 45]. Einarson et al. questioned 242 physicians and alternative practitioners about herbal drugs, and found that physicians are less likely to recommend herbal products to pregnant and breastfeeding women than alternative practitioners. Only one physician actually recommended a herbal product to a pregnant patient compared with 49% of the alternative practitioners, who felt comfortable doing so [46].

As the use of herbal medicine has become more prevalent, health care personnel need to be aware of potentially beneficial as well as harmful effects related to their use. As with any over-the-counter or prescription medicine, the woman's healthcare provider should be kept informed of her use of herbal therapy, and preferably the woman should discuss the use of herbs before she actually starts using them. Health care personnel should ask pregnant women if they take any herbs, or if they plan to. This should then be documented in the woman's chart. Some physicians and advanced practice health care personnel may fear liability or be uninformed and/or distrustful of herbal medicine, because few scientific studies are available for consideration. Additionally, experts may give conflicting recommendations. Health care personnel should educate themselves sufficiently to guide their patients in the safe use of herbs. Discussing the use of herbs in an open and nonjudgmental way will go a long way toward helping the patient and provider to communicate effectively about this topic. It is essential that health care personnel teach their patients about possible interactions between herbs and prescription or over-the-counter medications. The health care personnel should also familiarize themselves with how specific herbs are used, because the same key concepts underlying the administration of medications apply to herbal medicines as well, i.e. right medication, right route, right dose, and right time.

A limitation of the current study was that we did not ask women if they reported their herbal supplement use to their maternity care provider during pregnancy. A recent Australian study found that more than half of complementary therapies and medicine users did not report their use to a doctor prescribing conventional medicines [47].

Conclusion

The use of herbal supplements in pregnancy is likely to be relatively high in pregnant Iranian women and it is important to ascertain which supplements (if any) women

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are taking. Pregnancy care providers should be aware of the common herbal supplements used by women, and of the evidence regarding potential benefits or harm. It is important that care providers do not prescribe any treatments, medications or herbal supplements where they are unaware of the evidence supporting their use.

Acknowledgement

I would like to thank Dr. shayan in the center for clinical research center in Nemazee hospital for statistical assistance and also Dr. N. Shokrpour for editing the English manuscripts. Thanks are due to vice-chancellor for research in Islamic Azad University- Kazerun Branch.

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