

Herbal Ingestion During Pregnancy and Post-Partum Period is A Cause For Concern

C S Teoh, MD*, M H I Aizul, MD*, W M Wan Fatimah Suriyani, MD*, S H Ang, MD*, M Z Nurul Huda, MD*, M I Nor Azlin, MOG**, J Rohana, MMed (Paeds)*

*Department of Pediatrics, **Department of Obstetrics & Gynecology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, 56000, Cheras, Kuala Lumpur, Malaysia

SUMMARY

The potential harms of herbs to the pregnant mothers and their foetuses as well as the effect of herbs taken by nursing mothers on their babies remain largely unknown. Common perception is that herbal medicines ingestion during pregnancy and confinement period is a common practice among multi-racial Malaysian mothers. The purpose of this study was to explore the usage of herbal medicines during pregnancy and post-partum period among mothers who gave birth at a tertiary hospital in a metropolitan city of Malaysia. This cross sectional study was conducted between October and December 2010. The subjects were interviewed twice after giving birth: before hospital discharge and 6 to 8 weeks later.

A total of 323 mothers were recruited for this study. The prevalence of herbs ingestion during pregnancy was 13.9%, with half of the users consuming it during the first trimester. A total of 163 (52.9%) mothers ingested herbs during the post-partum period. Significantly more Chinese ($p=0.01$) and Malay ($p=0.04$) mothers ingested herbs during pregnancy and post-partum period, respectively. Infants of mothers who ingested herbs had a higher rate of neonatal jaundice compared to infants of mothers who did not ingest herbs during the post-partum period ($P=0.001$).

KEY WORDS:

Herbal medicine, pregnancy, post-partum period, neonatal jaundice

INTRODUCTION

The global use of herbal medicinal products is rapidly increasing. Herbal medicinal products usage in the United States general population rose by 380% between 1990 and 1997 (Eisenberg D et al. 1998). Similarly the sales of tested and untested herbal preparations in Malaysia are on the rise with more than 8000 herbal products registered with Malaysia's Ministry of Health in 1999 (Hussin A 2001).

Herbs have been widely used during pregnancy and post-partum period to reduce the discomforts associated with pregnancy and to "restore" the body condition after delivery. In contrast to prescription medications, most herbal products are marketed without going through clinical trials to demonstrate either their efficacy or safety. Safety concerns related to herbal products include its interactions with pharmaceutical products and contamination by toxins

(Hussin A 2001). The potential harms of herbs to the pregnant mothers and their fetuses as well as the effect of herbs taken by nursing mothers on their babies remain largely unknown (Hussin A 2001).

The reported prevalence of herbal medicines use during pregnancy ranges between 9.1% and 55% (Mabina MH et al. 1997, Gharoro EP et al. 2000, Pastore L 2000, Gibson PS et al. 2001) whilst during post-partum period it is as high as 87.7% (Chuang CH et al. 2009). Two studies conducted in Kelantan, a Malay-dominated state in the northeast of Malaysia reported the prevalence of herbs ingestion during pregnancy of 51.4% and 34.3% respectively (Rahman AA et al. 2008, Law KS et al. 2008). However there is no data regarding the use of herbs during pregnancy and post-partum period among the other major ethnic groups, namely the Chinese and Indians.

This study was conducted to determine the prevalence, types of commonly-used herbs and the socio-demographic factors associated with intake of herbs during pregnancy and post-partum period among mothers attending a tertiary referral hospital situated in metropolitan city, Kuala Lumpur. We were interested to know the similarities or differences in the pattern of herbs use in this multi-racial population.

MATERIALS AND METHODS

This cross sectional study was conducted between October and December 2010 at University Kebangsaan Malaysia Medical Centre (UKMMC), a tertiary referral hospital in cosmopolitan city of Kuala Lumpur, Malaysia. Mothers were approached for consent at a convenient time after delivery. A face to face interview using a structured questionnaire was conducted before the mothers were discharged from the hospital. Data collected included the demographic characteristics of the mothers, history of herbs ingestion, types of herbs, reasons for taking herbs, and source from where information on herbs was obtained. To assist the mothers to recall, a list of commonly available herbs in the local market was shown to them.

The second interview was conducted via a phone call six to eight weeks later to get the data on herbs ingestion during post-partum period. Inquiries were also made regarding breast feeding and whether the babies had doctor-diagnosed neonatal jaundice.

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Corresponding Author: Rohana Jaafar, Department of Pediatrics, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, 56000, Kuala Lumpur, Malaysia Email: drohana@ppukm.ukm.edu.my

Table I: Types Of Herbs Ingested During Pregnancy And Post-Partum Period

Type of herbs Frequency (%)	Pregnancy period (N:45)	Post-partum period (N:163)
Misai Kucing (orthosiphon stamineus)	0 (0.0)	1 (0.6)
Kacip Fatimah (euphorbia haterophylla L)	0 (0.0)	1 (0.6)
*Sendayu Tinggi	1 (2.2)	3 (1.8)
*Nona roguy	0 (0.0)	11 (6.8)
*Salindah	8 (17.8)	7 (4.3)
Garlic pills	0 (0.0)	3 (1.8)
Aloe vera	1 (2.2)	0 (0.0)
Ginseng	6 (13.3)	5 (3.1)
Chinese traditional herbs	20 (44.5)	27 (16.6)
Spirulina	2 (4.4)	0 (0.0)
*Ubat periuk	7 (15.6)	81 (49.7)
Combination of 2 or more herbs	0 (0.0)	24 (14.7)

*These are brand names of mixture of 5-6 types of Malaysian and Indonesian herbs

Table II: Comparison Between Infants Born To Mothers Who Ingested Versus Did Not Ingest Herbs

	Pregnancy Period (n=323)			Post-partum Period (n=308)		
	Herbs ingestion		P value	Herbs ingestion		P value
	Yes N=45	No N=278		Yes N=163	No N=145	
Mean gestation, weeks (SD)	38.42(1.63)	38.29(2.05)	0.94	-	-	-
Mean birth weight, grams (SD)	2953.33 (458.01)	2999.59 (540.55)	0.18	-	-	-
Had neonatal jaundice (%)	11(25.6)	110 (41.5)	0.05	80(49.1)	41(28.3)	0.01
Received phototherapy (%)	3(6.7)	48 (17.3)	0.19	30(18.4)	21(14.5)	0.36
Had exchange transfusion (%)	1 (2.2)	2(0.7)	0.62	1(0.6)	2 (1.4)	0.50

Herbs were defined as any plant-derived materials or preparations with therapeutic or other human health benefits which contain either raw or processed ingredients from one or more plants (WHO, 2000). Only orally taken herbs were included in this study, regardless of the amount, frequency or duration.

Using a single proportion formula with degree of confidence of 1.65 and prevalence of 51.4% (Rahman AA et al. 2008), 272 mothers were required as study subjects. However a total of 323 mothers were enrolled for the first interview to account for potential default rate of 20% during the second interview. The data was analysed using SPSS version 18. A p value of less than 0.05 was taken as significant.

The study protocol was approved by the hospital’s Research and Ethics Committee (Project code; FF-331-2010).

RESULTS

The ethnic composition of the enrolled mothers was similar to the general Malaysian population in which 61.3% were Malays, 30% were Chinese, 8% were Indians and the rest were of other ethnicities.

Forty five (13.9%) mothers had history of ingesting herbs during pregnancy. Twenty four (53.3%) of these mothers ingested herbs during the first trimester while 14(31.1%) of them took herbs throughout pregnancy. The commonest herbs taken during pregnancy was Chinese traditional herbs (44.5%) such as chuen lin, sanchi (panax pseudoginseng), thirteen taibo herbs, red and black dates and dang shen (codonopsis pilosula). This is followed by Salindah (17.8%) and ubat periuk (15.6%) (Table I).

Majority (95.3%) of the mothers were contactable for the second interview which was conducted via telephone 6 to 8 weeks post-delivery. One hundred sixty three (52.9%) of them ingested herbs during the confinement period. The commonly used herbs during confinement period were ubat periuk (49.7%) and Chinese herbs (16.6%) (Table I).

Reasons given by mothers for ingesting herbs during pregnancy included to improve their health (66.7%), to improve the health of their babies (60%), to facilitate labor and delivery (20%) and to reduce symptoms associated with pregnancy (15.6%). Mothers took herbs during the post-partum period to improve their general health and energy (51.1%), to promote uterine involution (49.1%), to slim down (39.9%), to facilitate wound healing (31.9%) and to increase breast milk production (16%).

Mothers obtained information or advice on the use of herbs from family members (43.7%), newspapers and magazines (40.6%), and friends (20.1%).

Significantly more Chinese (p=0.01) and Malay (p=0.04) mothers ingested herbs during pregnancy and post-partum period, respectively compared to other ethnicities. Significantly more multi-para mothers took herbs during pregnancy (p=0.01) and post-partum period (p=0.01) compared to first time mothers. There was no significant difference in age, marital status, occupation, income and level of education between mothers who ingested and did not ingest herbs either during pregnancy or post-partum period.

The gestational age and birth weight between babies born to mothers who ingested and did not ingest herbs during pregnancy were similar (Table II). A significantly higher

percentage of babies born to mothers who ingested herbs during the post-partum period developed neonatal jaundice. However there was no difference in the proportion of babies who required treatment for jaundice.

DISCUSSION

The prevalence of herbs ingestion during pregnancy among mothers in this study was 13.9%, lower than of a study conducted in the northeast part of Malaysia which reported 51.4% (Rahman AA *et al.* 2008). That study was conducted in a rural, Malay dominant community in contrast to our study which involved an urbanised, multi-ethnic population. However, a study conducted in Melbourne (Australia) which is also a city with multi-ethnic population found a higher prevalence of 36% (Forster DA *et al.* 2006). A study conducted in Tanzania found no difference in the prevalence of herbal use during pregnancy between urban and rural area (43.3 % versus 42%) (Mbura JS *et al.* 1985). We postulate that mothers followed up in tertiary referral centres are more cautious in ingesting herbs as their pregnancies are deemed at higher risk. Nevertheless, a similar study conducted in another tertiary referral hospital in Malaysia reported a higher prevalence of 34.3% (Law KS *et al.* 2008).

Majority of the mothers (53.3%) ingested herbs during the first trimester. This is in contrast to results from other studies which reported that 79.6% (Rahman AA *et al.* 2008) and 87.7% (Mbura JS *et al.* 1985) mothers ingested herbs during the third trimester. The finding of a significant proportion of mothers ingesting herbs during the first trimester is alarming as this is the most vulnerable period of foetal development when exposure to drugs, chemical and biological agents may cause structural malformations. A Taiwanese study reported that ingestion of huanglian and An-Tai-Yin herbs in the first trimester was associated with an increased risk of congenital malformations (Chuang CH *et al.* 2006).

In this study, the commonest reason cited for taking herbs during pregnancy was to improve the mothers' health, similar to that reported by several other studies (Forster DA *et al.* 2006, Bercaw J *et al.* 2010). A significant number of mothers also believed herbs will improve the health of their babies, similar to finding of a study conducted in Congella, South Africa (Mabina MH *et al.* 1997). A Nigerian study reported that mothers took herbs because it is perceived as harmless, easily accessible and affordable (Fakeye TO *et al.* 2009). Additionally many of the mothers in our study admitted that the opinion of healthcare personnel was not consulted as they believed doctors lack knowledge on traditional herbs and may discourage them from consuming herbs.

Our study found that significantly more Chinese and Malay mothers took herbs during pregnancy and post-partum period, respectively. Studies conducted in different parts of the world also found that herbal intake was more common among certain ethnic group within the same population (Gibson PS *et al.* 2001, Tanaka MJ *et al.* 2008). Interestingly, the type of herbs used by Malaysian Chinese is different from Chinese women in Taiwan who commonly used An-Tai-Yin,

pearl powder and Huanglian during pregnancy (Chuang CH *et al.* 2009). This might reflect cultural variations across regions that encompass factors beyond ethnicity.

Several studies have reported that ingestion of herbs during pregnancy have effects on the length of gestation and intra-uterine growth of the babies. A study done in Norway found that mothers who ingested traditional herbs with iron-rich compound gave birth to significantly heavier babies (Chuang CH *et al.* 2006) whilst a study in Taiwan showed that mothers who ingested *Coptidis Rhizoma* for more than 56 times gave birth to lighter babies (Chuang CH *et al.* 2009). An Italian study found a higher incidence of threatened miscarriages and preterm labours among regular users of chamomile and licorice (Cuzzolin L *et al.* 2010). Another study reported that the use of herbs during pregnancy was associated with increased risk of prematurity (Moussally K *et al.* 2010). In contrast, there was no significant difference in the babies' birth weight and gestational age between those born to mothers who ingested and those who did not ingest herbs during pregnancy in our study. The variable effects on gestation and growth of the babies could be dependent on the type of herbs ingested by the mothers.

The rate of breast feeding was similar between mothers who ingested (95%) and did not ingest herbs (93.8%) during the post-partum period. However there was a significantly higher occurrence of jaundice amongst newborns of mothers who consumed herbs during the confinement period. This warrants further investigations into the effects of commonly-used traditional herbs by Malaysian mothers on neonatal jaundice. In this study, the occurrence of jaundice was based on doctor-diagnosed jaundice as reported by the mothers. The possibility of under-diagnosis of jaundice in the babies of mothers who did not ingest herbs could not be ruled out as mothers would only consult the doctors if they or their family members detect jaundice in the babies.

In conclusion, ingestion of herbs is common among mothers who delivered at our centre, especially during the post-partum period. The practice of self-medications among mothers during pregnancy is a cause for concern among healthcare professionals. Even though a direct causal relationship between herbs consumptions and the higher occurrence of neonatal jaundice in infants of mothers who consumed herbs during post-partum period could not be established, this finding warrants further investigations. Correct information about herbs ingestion should be disseminated through the mass-media as the study showed it was an important resource of information among the mothers. It is also important for doctors to know the commonly used herbs by mothers and their properties and be able to educate mothers about the risk of non-prescribed or self-medication.

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