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## Use of herbal preparations among parturient women: Is there enough evidence - A review of literature

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### Abstract

There is evidence that more and more women use herbs and or its preparations during labor. This paper reviewed the commonly used herbs / herbal preparations among parturient women and investigated if enough evidence is available on the safety and efficacy of using herbs during labor. A review of articles published between January 1997-2014 June was carried out. The electronic data bases were searched and nine studies were identified potentially relevant. All the nine studies reviewed showed that raspberry either in the form of leaves or tablets was the most common herb used in western countries. Caulophyllum was the next common herb used. All the herbs were used either for the purpose of toning the uterine muscles or stimulate uterine contractions. The studies also reported no adverse effects were reported while using the herbal preparations. The use of herbs during labor had been found to be benefitting women and easing labor process without any side effects to mother and baby. Clinical trials are lacking to prove the safety and effectiveness of herbal use during labor.

**Keywords:** laboring women, traditional herbs, raspberry leaves alternative and complementary medicine therapy.

### 1. Introduction

Although we know that delivery is considered to be a natural process, pain during labor is considered to be severe and hard to cope up. Besides the newer methods like painless labor with the use of inhalational or other methods of analgesia for pain relief, using herbs and its preparations is still increasing among women. More and more women are approaching the health care providers for guidance and information on use of herbs during labor and delivery. Herbs are also used to induce true labor and to shorten the second stage of labor. The WHO (World Health Organization) estimates that about 80% of the population living in developing countries relies almost exclusively on traditional medicines for their primary health care needs. Plants are the backbone of traditional medicine. In almost every system of medicine plants play a major role and constitute traditional medicine<sup>[1]</sup>.

Uses of herbal medicines are defined as a plant derived material or its preparations with therapeutic benefits and contain raw or processed ingredients from one or more plants<sup>[2]</sup>. Many studies have reported the use of complementary and alternative methods for pain relief during labor. Use of herbs is common, particularly in areas where access to modern health care is not accessible or affordable. Huge number of villages in India, China and many countries of south East Asia, interior areas of South Africa reported the use of traditional medicinal plants and medicines for treating various health problems including maternal care<sup>[3]</sup>. Herbal medicine is described as the use of plant materials in medicine and food for therapeutic purposes. Various herbal remedies are used during the prenatal period to "prepare" the uterus and cervix for childbirth and ease pain during labor and delivery<sup>[4]</sup>. Some herbal remedies are used as the principal method of managing pain and enhance endurance during delivery. Practitioners observed that these herbal formulas had a calming and relaxing effect. Labor pain can also be treated with motherwort. The difficulties with herbal remedies are that few have undergone scientific scrutiny, chemical isolation, or extraction to identify the pharmacologically active agent or enable toxicity testing<sup>[4]</sup>. Researchers have attempted to uncover the reasons why women turn to use CAM (Complementary and Alternative Medicine) in general and to botanical medicine in particular. Desire to have control over their health has been cited as the strongest motive for women to use herbal medicine. Second was dissatisfaction with the conventional treatment and its disregard for a holistic approach. Further more women prefer herbs over conventional medicine as they have concerns about the side effects of medications. Women probably feel

comfortable using herbal remedies because of perceived safety, easy access and the widespread availability of information about them in internet, magazines and books [5]. A clinical review reported that since ancient times, pregnant women have used and midwives have recommended herbs to facilitate labor. These preparations are often referred to as “partuspreparators”. Depending upon the herb, these labor aids were taken anywhere from a few days to a month before the suspected due date. Indigenous North Americans used blue cohosh to induce or stimulate sluggish ineffective contractions [5]. Every woman who is pregnant dreams for a safe and normal delivery. Women also wish to have a delivery without complications. She tries to search for techniques and methods to get relief or cope up with labor pain further more. Advice from older women and information from women who benefitted from use of herbal medicines are also a reason for women to approach traditional herbs. More over women during parturient period use herbs for the purpose of toning the uterus, getting relief of labor pain, stimulating or induction of labor and to control bleeding during delivery. In addition to that women also use herbs during pregnancy to have therapeutic effects on the birth weight of newborn. Many herbs like *Raspberry* leaf, *Achyranthes aspera* L, blue and black cohosh, *Chanlibao* (Chinese herb), floradix, fenugreek, motherwort, evening primrose oil, and ginger have been reported for some effect on labor. These herbs and plant products are used in the form of plant decoction, tea, and as tablets for their therapeutic use. Many ethno botanical surveys have reported the use of herbs but a solid statistical data base or evidence on the effectiveness of herbs is lacking. Rasp berry leaf has a specific affinity for the uterus and has been used since ancient times to encourage an easy childbirth. By toning the muscles used during labor and delivery raspberry leaf, eliminates many of the reasons for a painful delivery and prolonged delivery. It does not however, counter the pain of pelvic dilation. The high mineral content of *Raspberry* leaf works to encourage the uterus to let go and function without tension. It does not strengthen contractions, but allow the contracting uterus to work more effective and make birth easier and faster. Furthermore it helps to provide a safe and speedy healing after the birth [6]. *Red raspberry* leaf, otherwise known as *Rubus idaeus*, has been used medicinally since the sixth century. Its use and reputation as an aid in pregnancy and childbirth has gone throughout the years, despite the paucity of research into its safety and efficacy for mothers and babies during pregnancy and birth [7]. According to the author of a book titled “Wise woman, herbal for the childbearing years”, reports the benefits of drinking raspberry leaf tea includes the following. *Raspberry* leaf tones the uterus and helps to prevent miscarriage and postpartum hemorrhage from a relaxed or a tonic uterus [7]. *Raspberry* leaf in turn facilitates placental delivery. Chips of frozen *raspberry* leaf infusion sucked throughout labor helps to keep the uterus working strongly and smoothly. The *raspberry* leaf is reported to be reducing pain during labor and afterbirth by toning uterine muscles. *Raspberry* leaf eliminates many of the reasons for a painful birth and prolonged recovery. It is reported that raspberry leaves do no start or encourage labor. It can help the contractions to be productive once true labor has begun. Various herbal remedies are used during prenatal period to ‘prepare’ the uterus and cervix for childbirth and ease pain during labor and delivery [8]. *Raspberry* leaf contains “fragrene” in high levels as it is an alkaloid which strengthens the entire pelvic floor and entire region including uterus and

ovaries. It facilitates in maintaining the tonicity of the uterus [7].

A study reported, fenugreek (*Trigonella foenum graecum*) is consumed by pregnant women. The seeds contain oxytocin which stimulates uterine contractions. Prescription from a physician is necessary before it is consumed [9]. Fenugreek stimulates uterine contractions and fastens labor process. It is also helpful in inducing childbirth. 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 [10]. *Achyranthes aspera* L. locally known as “UbatKandri” in India and Pakistan. *Achyranthes aspera* L. (Family Amaranthaceae) is a common plant of the study area abundantly found in waste lands. It is known as “Prickly chaff flower” in English and “Chirchita”, “Onga”, “Latjeera” or “Apamarga” in local language and dialects [11]. All parts of this species are used as medicinal plant. The paste of the root is given to stop bleeding after abortion and to facilitate delivery and stimulate labor pain [12]. The paste of the root of *Achyranthes aspera* L. is given to stop bleeding after abortion and to facilitate delivery and stimulate labour pain [13]. *Achyranthes aspera* is used to induce labor pains. A thin paste is obtained by grinding fresh roots with sufficient quantity of water in a mortar and pastel. The paste is applied to external genitalia [14]. A study reported on folklore medicinal aspects and medicinal practices of different tribes, to ease delivery, Yanadi folk have their age old proven practice. They grind finely the root of “*Adhatoda zeylanica*” and keep the paste on the navel, around the abdomen and also in vagina [15]. *Chanlibao* is a traditional Chinese herbal medicine that was used for shortening of the second stage of labor. *Chanlibao* was given orally to the intervention group at the end of the first stage of labor. One control group received standard care, and another received standard care plus oxytocin. The length of the second stage of labor was significantly lower in *Chanlibao* group compared to the control group (38.4 mints VS 53.1 min) respectively, whereas oxytocin was 41.6 mints [16]. Blue cohosh (*Caulophyllum thalictroides*) and black cohosh (*Actaea racemosa*) formerly *Cimicifuga ramosa* have been used as homeopathic labor stimulants around the world, especially in Europe and India [17].

## 2. Objectives of the Review

1. Why do parturient women use herbal medicines?
2. What are the commonly used herbs and or its preparations used by parturient women?
3. Is there enough evidence on the safety and efficacy of herbal use among parturient women, from previous research studies?

## 3. Search strategy

The authors reviewed all published and unpublished literature related to use of herbs and its preparations during labour. The online databases SCIENCE DIRECT, PUBMED, CINAL, EBSCO, SCOPUS, and UPTODATE were used for identifying relevant studies. Medical subject handling terms (MeSH) and free text terms such as herbs used among laboring women, rasp berry leaves, herbal use during pregnancy and delivery, traditional herbs, alternative and complementary medicine therapy were used for the search.

## 4. Selection criteria

Studies were identified from international peer- reviewed

journals that used clinical trials, descriptive, case study, cross sectional, retrospective and prevalence approaches in research. All published and unpublished studies, master's thesis, conference abstracts and presentations between the years 1997-2014, use of herbs during pregnancy and delivery were included in the review. A total of 115 articles were identified as relevant. Studies which met the selection criteria were included in the review. Data from nine studies were identified as potentially relevant and were abstracted into a standardized form.

### 5. Data collection and analysis

All the reviewers participated in the scrutinizing process of the searched articles for its quality and involved in the data extraction. All the nine studies were reviewed by the authors for the research approach; sample and population, setting, herbs used during labor, name of the herbs, objectives, interventions with the outcome of the study.

### 6. Results of the Search Strategy

Among the nine studies, one each from South Africa, Norway, Sweden, China and Texas, two each from United States, and Australia, were included in the review. The summary of the studies has been shown in the table 1. A total of 2008 women were included in the reviewed studies. All the 9 studies reviewed (ref. table 1) showed that it benefitted women who used herbal drugs during pregnancy and labor (2008 women), traditional healers (45), Certified nurse midwives, American college of midwives (569), and nurse midwifery education programmers in the United States (48).

### 7. Discussion

Traditional home medicines and herbal use for pregnancy, labor and delivery are still in practice throughout the world. Advice from traditional birth attendants and elderly women regarding, stimulation or initiation of true labor, relief of pain and methods to ease during labor is still found in practice. These uses of herbs have a lot of recognizable therapeutic effects. However lack of scientific research and evidence of the effective use of herbs still exists. Despite lack of evidence women in childbearing period and thereafter, use herbal relief is that it is easily accessible, no reported side effects and adherence to traditional family practices.

Very few studies have evaluated the effect of herbal preparations for relief of labor pain and safe maternal outcome. Many papers report the results of floristic and ethnobotanical projects and surveys, which describe the local practices of herbal medicines and it lacks information on clinical trials. Though many plants which hold reputed positions in traditional medicinal system, no systematic studies or pharmacognostical work is documented. Various traditional and folklore interventions for treatment and coping up with labour pain include herbal plants and its preparations (part of Ayurveda) Siddha, Unani and many complementary therapies like acupuncture, massage, aromatherapy and others.

When induction of labor is indicated, women may be more accepting of a natural or non pharmacologic method, and as with many intervention, it makes sense to use the least invasive, most effective method available. Homeopathic labor stimulants are potentially viable alternatives to oxytocin and prostaglandin for inducing and augmenting labor<sup>[17]</sup>.

The studies in this review were from different countries. The table 1 shows the summary of studies included in this review. The table shows commonly used herb were raspberry leaves,

blue and black *Cohosh*, *Isihlambezo*, *Caulophyllum*, *Ginger*, *Cranberry* and iron rich herbs. Majority of the studies in this review reported the use of raspberry leaves or its tablet form. Next to it was the use of the herb *Caulophyllum*. Research reveals popularity in use of raspberry leaves among western culture than non-western culture. All the studies in this review were from western counterparts and only one from Asia, that was China. Among the 9 studies reviewed only two studies were randomized clinical trials which prove the safety of the herbs used. Other studies used survey methods to identify the herbs that were used by laboring women. The sample size in these two clinical trials was 192 and 80 women respectively. The sample size is small and findings report proven benefits to women and hence cannot be ignored. One study had used the case study method where the herb was used in preterm mother and did not cause any harm either to mother or baby. On the whole the evidence is not enough to prove the safety and efficacy of the herbs among laboring women.

A study of herbal remedy used for labor stimulation by nurse midwives in the United States showed that 52.3% used herbal remedies to stimulate labor<sup>[18]</sup>. Raspberry leaf was used by 63% of the users and was the third most used herb after castor oil (93%) and blue *Cohosh* (64%). The most cited reason for using herbs was that they are "natural". The most common reason for not using them was the lack of research and experience with safety, the knowledge about the herbs was not acquired through formal education (0%) but mainly from midwives (69%). A limitation of this study, however was a low response rate (34.4%)<sup>[19]</sup>.

A study was conducted among the nursing programmers which included instructions on use of herbs during prenatal period. The study reported that 64% of the 48 nurse education programmers, included in their curriculum instruction regarding use of herbal preparations to stimulate labor in their formal curricula. 92% of the nurse education programmers used informal discussions on the use of herbal preparations. Evening primrose oil was the most common herbal preparation discussed. This shows that the nurse education programmers are preparing future nurses to confidently use herbal preparations for women in labor<sup>[20]</sup>.

Current nurses and midwives need to learn more about herbal use during childbearing period. The reason is more and more women are now asking midwives about use of natural herbs to ease labor pain, to prevent complications during and after labor. Some of the safe herbal remedies for induction of labor reported are raspberry leaves, black and blue *cohos*, evening primrose oil, lobelia motherwort and partridgeberry. Midwives and health care providers should be provided with guidelines in use of herbal medicines. In spite of limited evidence available herbal medicine use during labor has shown benefits in women and no side effects being reported among the studies reviewed.

### 8. Conclusion

Many studies indicate that it is very much common among pregnant and delivering women to use herbs and its preparation to gain therapeutic effects. Herbal preparations can be recommended as it is considered to be low cost, easily accessible and convenient approach with minimal side effects. Use of herbal preparation will benefit when the laboring woman is contraindicated for oxytocin or profuse infusion. Use of herbs during pregnancy and delivery will be a cost effective alternative for other pharmacologic agents. However lack of clinical trial and proper documentation calls for the

need for further research in use of herbs and its preparations among laboring women. This review concludes that there is not enough evidence to support the use of herbal preparations during labor.

### 9. Limitations of the search

All the nine studies reviewed were published between the years 1997-2014. Few studies were published in other than English language and were done recently and hence could not be included in the search. Few studies were done other than human subjects. Many studies had information on folklore medicine and the local practices of people and had no data on clinical trials. Hence there is less evidence on the effectiveness of herbal use during delivery and maternal outcome.

### 10. Implications for practice

This review suggests or calls for future research required to assess the safety and efficacy of herbs and its preparations among parturient women. More clinical trials in use of herbs among parturient women are recommended. Formulating guidelines for midwives and health care providers in use of herbs and its preparation during labor and educating women will be the future need.

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### 12. Conflict of interest

The authors declare no conflicts with anyone regarding the contents of this article

**Table 1:** Summary of studies focusing on use of herbs during labor.

S. No	Study & author	population	No of participants	setting	Research approach	intervention	outcomes	Name of the herb used
1.	Sussane J. Kistin, Alyssa D. Newman (2007)	Woman in labor with PROM	1	United states	Case study	To explore the role of homeopathic substances as potential alternatives to commonly used induction agents and to encourage further clinical research	For a woman in preterm labor with PROM, the mother had regular contractions after using nipple stimulation along with 1 tablet of <i>Caulophyllum</i> 30c, and remained afebrile. After nine hours of admission mother delivered a healthy boy with no complication.	Tablet of <i>Caulophyllum</i> made from the herb blue cohosh
2.	C.A. Varga., D.J.H. Veale (2013)	Rural and Urban women	218 Pregnant and non-pregnant women aged 15-70 years and also 45 traditional healers	South Africa	survey	To investigate differences in knowledge, attitudes and patterns of <i>Isihlambezo</i> among four groups of women. Rural, urban clinic attenders and non-clinic attenders. And also to examine the possible maternal-fetal health impact of <i>Isihlambezo</i>	There were significant differences by area of interview in all uses of <i>Isihlambezo</i> . It is considered as an important antenatal health care alternative by major women surveyed	<i>Isihlambezo</i> herbal decoction

						ingestion from a pharmacologic perspective		
3.	Barbara L.M.C. Farlin, MaryH. Gibson, Jann O Rear, Patty Harman(1999)	Members of American college of midwives	500 ACNM and 48 nurse midwifery education programmers'	United states	survey	Use of herbal preparations for cervical ripening, induction or augmentation of labor.	64% used blue cohosh, 45% used black cohosh and 63% used raspberry leaves and 93% used castor oil and 60% used evening primrose oil. 64% of nurse midwifery programs included instruction in the use of herbal preparation. Evening primrose oil was the most common herb discussed in nurse midwifery programs and castor oil was the most commonly used herbal preparation by nurse midwives in clinical practice.	Blue and black cohosh, raspberry leaves, castor oil and evening primrose oil.
4.	Bryan P Bayles (2007)	Texas midwives , LMS and CNMs	69	Texas	Cross sectional survey	To determine whether licensed LMS and CNMS differed significantly in their patterns of use of herbal and complementary therapies	Herbal therapies were among the top three modalities used by them. Herbs were used for cervical ripening (83%) and labor induction 77%	Blue and black cohosh, raspberry leaves, castor oil raspberry leaves and unspecified herbs
5.	Simpson M, Parsons M, Greenwood J, Wade.K (2001)	Nulliparous women who gave birth at tertiary level hospital	192	Sydney, Australia	Double blind randomized placebo controlled trials	Effect and safety of raspberry leaf tablets consumed from 32 weeks until labor and effect on labor outcomes.	Consumption of raspberry tablets did not cause any adverse effects. It also did not shorten the first stage of labor. But second stage shortening (mean difference=9.59 mints) and lower forceps deliveries between treatment groups.	<i>Raspberry</i> leaf tablets 2x1.2 g/day
6.	Myra Parson,Simpson.M, Terriponton (1999)	Women who birthed	108	Westmed hospital , Austrlia	Retrospective observational design.	To investigate the safety and efficacy of the raspberry leaf herb, ingested by women during their pregnancy on their labor and birth outcomes.	No side effects were identified. Ingestion of the tablet might decrease the likelihood of pre and post term gestation. Less likely to receive artificial rupture of membrane, or require a caesarean section, forceps o vacuum birth than women	<i>Raspberry</i> leaf tea and tablet

							in control group.	
7.	Nordeng, H, Bayne.K,HavenenGC,Paulisen BS (2011)	Women at stavanger university hospital within 5 days after delivery	600	Norway	Interview using structured questionnaire	To investigate the use of herbal drugs by pregnant women in relation to concurrent use of unconventional rugs and pregnancy outcome	39.7% women used herbal drugs during pregnancy. There was a significant association between iron rich herbs during pregnancy and high birth weight and use of raspberry leaves and caesarean delivery	<i>Ginger</i> , iron rich herbs, <i>Echinacea</i> , cranberry and rasp berry leaves.
8.	Holst L, Nordeng H, Haavik (2008)	Women who used herbal drugs during pregnancy	787	Sweden	Retrospective review of birth registers	Review of birth registers to study the characteristics of women using herbal drugs and possible impact of use in early pregnancy and on pregnancy outcome	The most commonly reported herbal drugs during pregnancy were floradix (iron rich herbs) ginseng, and valerian. No signs of unfavorable effect on pregnancy outcomes were seen.	Floradix (iron rich herbs) ginseng and Valerian
9.	Qui. H, Quyang W, Wang Z, Sun.H (1999)	Primiparous women in labour	80	china	Randomised control trial	To observe the clinical effects and the mechanism of Chanlibao in accelerating second stage of labour	No side effects of chanlibao was found. It revealed that chanlibao could strengthen uterine contraction and accelerate second stage. The results also showed time of second stage and postpartum hemorrhage in chanlibao group was less than control group.	Chanlibao (CLB a preparation of chinese herbal medicine)

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