

Effect of Consumption of Date Fruit in Late Pregnancy-A Review in Islamic and Scientific Perspective

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ABSTRACT

The Date fruit has shown to possess several health benefits and appears to be a reasonable, natural and pocket friendly food of choice as well-balanced diet for pregnant women. Effect of consumption of date fruit have been documented in Holy Quran, Prophetic Hadith's and modern scientific literature during pregnancy, Labor and during postpartum. Cervical ripening before onset of labor is an important factor for prediction of delivery mode and is directly associated with vaginal delivery. Based on some clinical studies, date fruit consumption during late phase of pregnancy can lead to increase in cervical dilatation, increases spontaneous onset of Labor, decreases the need of induction by oxytocin, reduces duration of labor and postpartum hemorrhage. Date fruit contains high percentage of carbohydrates, fats, 15 type of salts, minerals, vitamins, proteins, hormones, saturated and unsaturated fatty acids that plays an essential part in production of prostaglandins apart from contributing and providing energy and affect on oxytocin receptors and make uterine muscles to respond better to oxytocin hormone.

Keywords: Date fruit, Prophetic Hadith, Pregnancy, Labor, Prostaglandins, Oxytocin Receptor.

INTRODUCTION

A series of events that takes place in the genital organs in an effort to expel the viable product of conception out of the womb through the vagina into the outer world is called Labor. The precise mechanism of initiation of Labor is still obscure. Labor concerned with series of different stages in which first stage is chiefly concerned with the dilatation and effacement of the cervix and full formation of lower uterine segment for the preparation of birth canal so as to facilitate expulsion of the fetus in the second stage of Labor [1]. But, now a day rate of caesarean section is increased with unpleasant outcome of delivery.

WHO (World Health Organization) reported 15% of unnecessary rate of caesarean section with its complication. The rate is increased due to some factors like high maternal age in pregnancy, pregnancy with IVF (In vitro fertilization) or IUI (Intra uterine insemination), pregnancy after recurrent abortions, pregnancy with history of repeated caesarean section and abnormal progress of Labor with ineffective uterine contraction etc. That's why scientists focus on mother's physical and mental needs including the need for energy during Labor without any complication and Labor outcomes (duration of labor stages, bishop

score, and frequency of cesarean section) [2].

Cervical ripening is a series of complex biochemical changes in the cervix which is mediated by the hormones and usually occurs during late pregnancy [3]. There is alteration of cervical collagen and ground substance. Ultimately the cervix becomes soft and pliable [3]. A ripe cervix is soft, 80% effaced (<1.5 cm in length), easily

admits one finger, and cervical canal is dilatable. Effacement is the process by which the muscular fibers of the cervix are pulled upward and merges with the fibers of the lower uterine segment [1]. Increase in ripening and effacement of cervix with high bishops score decreases rate of caesarean section. The ratio of cervical dilatation to total bishop's score is a more reliable predictor for success of Labor and delivery mode [3].

Table 1: Bishops Pre-induction Cervical Scoring System (Modified)

Parameters	Score			
	0	1	2	3
A) Cervix				
1) Dilatation (cm)	Closed	1-2	3-4	+5
2) Effacement (%)	0-30	40-50	60-70	>80
3) Consistency	Firm	Medium	Soft	-
4) Position	Posterior	Midline	Anterior	-
B) Head				
1) Station	-3	-2	-1, 0	+1, +2
*Cervical length (cm)	> 4	2-4	1-2	<1
*Modification (1991) Replaces effacement (%) with Cervical length (cm)				
Total Score= 13		Favorable Score= 6-13		Unfavorable Score= 0-5

Post term delivery is an important issue in obstetrics which is associated with fetal and maternal outcomes (Labor induction, prenatal morbidity and mortality) [4] so that induction and augmentation of Labor with prostaglandin and oxytocin are well established as standard practice worldwide in case of abnormal progress. They are safe when used judiciously, but may be associated with maternal and neonatal morbidities too [5].

Numbers of studies are carried out to explain the benefits of date fruit on improvement of Labor process. Because date fruit is considered as a factor for increasing vaginal delivery and also reducing the frequency of caesarean section [2].

In the holy Quran (the Holy book of Islam), Allah instructs the Virgin Mary

(Maryam) to consume date fruits when she gives birth to prophet Isa (peace will be upon him). Therefore, not surprisingly, date fruits are commonly referred within the Islamic tradition as beneficial to pregnant women [6]. Number of studies throughout the world has been done to evaluate the effect of consumption of date fruit in Labor, delivery and postpartum hemorrhage especially in nulliparous women with uncomplicated singleton pregnancy with cephalic presentation, and having no medical and midwifery problems in 26–30 weeks of pregnancy.

Date fruit (*Phoenix dactylifera*)

The date fruit appears to be a reasonable food of choice for pregnant women as a part of a well-balanced diet. It contains a high percentage of carbohydrate, fat, and 15 types of salts, minerals, proteins, and vitamins [6].

Table 2: Dates, Nutritive Value per 100gm [8]

Dates (<i>Phoenix dactylifera</i>), Nutritive Value per 100 g (Source: USDA National Nutrient data base)		
Principle	Nutrient Value	Percentage of RDA
Energy	277 Kcal	14%
Carbohydrates	74.97 g	58%
Protein	1.81 g	3%
Total Fat	0.15 g	<1%
Cholesterol	0 mg	0%
Dietary Fiber	6.7 g	18%
Vitamins		
Folates	15 µg	4%
Niacin	1.610 mg	10%
Pantothenic acid	0.805 mg	16%
Pyridoxine	0.249 mg	19%
Riboflavin	0.060 mg	4.5%
Thiamin	0.050 mg	4%
Vitamin A	149 IU	5%
Vitamin C	0 mg	0%
Vitamin K	2.7 µg	2%
Electrolytes		
Sodium	1 mg	0%
Potassium	696 mg	16%
Minerals		
Calcium	64 mg	6.5%
Copper	0.362 mg	40%
Iron	0.90 mg	11%
Magnesium	54 mg	13%
Manganese	0.296 mg	13%
Phosphorus	62 mg	9%
Zinc	0.44 mg	4%
Phyto-nutrients		
Carotene-β	89 µg	--
Crypto-xanthin-β	0 µg	--
Lutein-zeaxanthin	23 µg	--

Most studies have shown that date fruit affects the progress and spontaneity of Labor and reduces post partum haemorrhage. Number of studies shown that Date fruit consumption increases pain threshold and its intake in late pregnancy so can recommended to accelerate Labor [3].

In late pregnancy, as the level of prolactin increases, pregnant women feel the need of

more nutrients. This energy is stored in the body and can be used at the time of delivery [12]. The amount of energy needed for Labor can be compared with that of aerobic exercises, it is estimated to be between 50 and 100 kcal per hour.² Because smooth muscles need energy 20–400 times more than skeletal muscles, the best materials for supplying energy are fat and fatty acids, which provide muscles with more energy than glucose; therefore,

storing fats is very integral in late pregnancy [9].

During Labor women is advised not to drink or eat anything by mouth which reduces her energy level and increases fatigue [2]. Consumption of 6 date fruit per day in late pregnancy (36 weeks-40 weeks) [10] and during Labor provides enough amount of energy to store in the body and prevents physical weakness and fatigue because dates are among those energizers which have lots of carbohydrates too which includes fructose, glucose, and sucrose. Adequate source of energy is needed to maintain physical power of parturient for Labor activity and consuming date fruit in late pregnancy and during Labor can be helpful in supplying and serving energy for overcoming fatigue and hunger due to high level of calories [6].

Fatty acids (Saturated and unsaturated) present in date fruit play an important role in producing prostaglandins apart from supplying energy [3]. Prostaglandins are essential for cervical ripening, acceleration of delivery progress, increases uterine contraction and induction of Labor [2]. The increase in the levels of the prostaglandins in pregnant women causes uterine contractions during term [6].

Chemical composites found in dates differ depending on weather conditions, planting area, age of tree, and process of fruit growth. The mineral content differs in various types of dates; however, 15 different types of minerals have been determined in it, including potassium, calcium, chlorine, zinc, phosphorus, iron, magnesium, and sodium, together with saturated and unsaturated fatty acids such as oleic, linoleic, and linoleic acids [6].

Tannin found in date fruit plays an important part in contraction of smooth muscles of cervix. Oxytocin receptor

concentration increases 200–300 times during pregnancy [3,12], especially in late pregnancy. This increase in concentration results in increase in myometrium sensitivity to oxytocin. Stimulation of oxytocin receptors in central nervous system decreases anxiety followed by the initiation, progression, and acceleration of the delivery. Date fruit has an oxytocin-like effect which leads to increased sensitivity of the uterus and help stimulate contractions just like oxytocin does [3]. Date fruits affect oxytocin receptors and make the uterine muscles respond better to oxytocin [6], resulting in much more effective uterine contractions because ineffective contractions of uterine muscles is a common causes for unnatural development of laboring and consequently a prolonged labor, which leads to increase in level of cesarean and induction of labor [6,12].

This fruit also contains hormones that help the uterus to stretch and to be prepared for infant delivery [2,3]. Its consumption is also helpful in strengthening the uterine muscles [3]. Thus, it prevents postpartum haemorrhage and increases speed of delivery progress [11]. Use of date fruit is an effective way to prevent prolonged pregnancy and reduced the need for induction [6].

CONCLUSION

Date fruit is an energizing and nourishing substance that reduces duration of active phase of Labor and improves the bishop score. Consumption of date fruits in late pregnancy increases spontaneous Labor and decreases the duration of the latent phase of the first stage of Labor.

Consumption of date fruits in late pregnancy was effective in increasing cervical dilation, decreasing length of labor processes, decreases postpartum haemorrhage and reduces need of oxytocin for labor acceleration.

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