

Evaluation of Role of Pineapple in the Duration of Labour

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ABSTRACT

Background: Oxytocin is usually used to improve the contractions during labour. But non-pharmacological alternatives are preferred to increase uterine contractions.

Methods: A quantitative study was done. A sample of 76 respondents was taken which consists of 27 respondents who were given 100 gm Pineapple while 22 control respondents who were not given any fruit or drug.

Results: Duration of length of stage 1 and 2 of labour were shorter in mothers who consumed 100gm Pineapple compared to the Control group.

Conclusion: Pineapple consumption leads to reduction in the duration of length of stage 1 and 2 of labour.

Keywords: Pineapple; Length of Stage 1 and 2 of Labour

Introduction

Labour is the last few hours of human pregnancy. Overall, it does not last for more than 24hours [1]. It is characterised by forceful & painful uterine contractions that effect cervical dilation & cause the fetus to descend through the birth canal. Extensive preparations take place in both the uterus and cervix long before this. Labour onset clearly represents the culmination of a series of biochemical changes in the uterus and cervix. These result from endocrine and paracrine signals emanating from both mother and fetus. Physiological and psychological changes can have an impact

on labour. The muscles around the pelvis are tense, there is pain, the body is weak and tired, so the mother loses the power to push. Hence, the loss of strength to straining can cause parturition to last longer [2]. One of the efforts taken to improve contractions in labour is to use oxytocin as a pharmacological effort. However, non-pharmacological effort is more recommended as a natural alternative to help the contractions remain stable. In this study the supply of food to help labor is to consume fruit that contains substances to ease uterine contractions such as pineapple [3]. Pineapple contains

high Vitamin C, sugar, minerals, serotonin and bromelain enzymes [4]. In 100grams of Pineapple fruit contain variety of nutritional elements which can stabilize uterine contractions, ease the labour and meet the nutritional needs of mothers. By consuming 100grams of Pineapple the time of latent phase of Stage 1 is expected to help mothers deliver the baby smoothly and the condition of the mother and baby are in good health.

Materials and Methods

A quantitative study was done. The population was mothers in latent phase of stage one. The sample was 76 respondents which consist of 27 respondents who had pineapples (100 g) and 22 control respondents who did not have any fruit or drug. They were taken from Dr D.Y. Patil Medical College in compliance with the inclusion and exclusion criteria.

Inclusion Criteria

- 1) Age group > 18 years
- 2) Term pregnant women
- 3) No co-morbidities.

Exclusion Criteria

- 1) Preterm
- 2) Gestational Diabetes Mellitus and other co-morbidities
- 3) Contracted Pelvis.

Data Analysis

The Characteristics of Respondents (Table 1)

Table 1.

Respondent Characteristic	Pineapple		Control	
	N	%	N	%
Ages				
18 - 35 years	38	90.4	36	78.2
>35 years	4	9.5	10	23.8
Occupation				
Home maker	28	66.6	30	65.2
Working	14	33.3	16	34.7
Parity				
Primipara	22	52.3	22	47.8
Multipara	20	47.6	24	52.1
Anaemia				
Anaemic	8	19.04	6	13.04
Normal Hb	34	80.9	40	86.9
TOTAL	42	100	46	100

Interpretation: Based on above table, the characteristic of respondents is:

- a) **Age:** In the pineapple group, from 42 respondents, there were 38 respondents (90.40%) mostly who are 18-35 years old, there were 4 respondents (9.5%) who are >35 years old.
- b) **Occupation:** In the pineapple group, from 42 respondents, 28 (66.6%) were homemakers, meanwhile in the control group from 46 respondents, 30 (65.2%) did not work.
- c) **Hb:** In the pineapple group, from 42 respondents there were 34 (80.9%) respondents had mostly normal Hb while in in the control group of from 46 respondents, 6 (13.04%) were anemic.
- d) **Parity:** In the pineapple group, from 42 respondents, there were 22 respondents (52.3%), whom are mostly primipara, in the control group from 46 respondents, there were 22 respondents (47.8%) whom are mostly primipara.

The Difference in Time Duration in Labour Between Study and Control Group

Stage I: (Duration of labour in Pineapple group – Duration of labour in Control group) = 704.624 min.

Stage II: (Duration of labour in Pineapple group – Duration of labour in Control group) = 28.421 min.

Based on the results of Table 1, the length of stage I of the intervention of pineapple consumed showed P value $0.012 < \alpha 0.05$. Meanwhile, the length of the stage II the intervention of pineapple consumed showed P value $0.029 < \alpha 0,05$

Discussion

The Characteristic and Normality of Respondents

Based on the results of statistical tests on the characteristics of research subjects, it showed that there were no significant differences in the characteristics of respondents based on age and work among two groups. However, there are differences in the characteristics of respondents based on Hb and parity between the two groups. Therefore, it can be concluded that the characteristics of respondents based on Hb, and parity affect the results of the intervention in the two groups. Low Hb levels in pregnant women until the time of the labor process affect the work of the reproductive muscles, namely the uterine muscles, pelvic muscles and ligaments. This results in the mother not to have the power to push which influence on the opening of the birth canal and finally the labor process has difficulty [5]. Abnormalities of power (contraction) are found in *primigravida*, especially old *primigravidas*. In multiparas,

there are more abnormalities of uterine inertia. Abnormal contraction both strength and nature, will inhibit labor.

Length of Stage I and Stage II in Study Group which Consumed Pineapple Compared to Control Group

The study showed that Pineapple can reduce the length of stage I of labour by about 704.624 minutes and of stage II by 28.421 minutes. Pineapple eases the uterine contractions in labour and has antioxidants and anti-microbial effects due to presence of Vitamin C. It also contains other minerals and enzymes such as Bromelain which stimulate prostaglandin production. This prostaglandin is one the factors which causes uterine contraction in labour [4]. Trials on animals (female guinea pigs) prove pineapple fruit extract causes uterine contractions [6]. Based on international journal of Ethnopharmacology in Uganda it states that Pineapple is one of the fruits that can induce labour due to enzyme bromelain [7]. This research is supported by another research conducted in West Sumatra according to which consumption of 100 grams of Pineapple to a mother of 36 weeks of gestation affects uterine contractions [8].

Conclusion

Length of stage 1 of labor is shorter in mothers who consume 100 g of pineapple compared to control group.

Length of stage 2 of labor is shorter in consuming the pineapple compared to control group but not clinically relevant.

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