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ABSTRACT

Background: Previous studies have proved that lip prints were unique permanent records of human being analogous to fingerprints and distinguishable. *Dadih* is traditional processed milk from West Sumatera which is functioning as natural food probiotic source (*Lactobacillus sp.*). Probiotic had been studied in the last several years as treatment for genetic skin disorder such as atopic dermatitis, psoriasis and acne. The present study aims to investigate cheiloscopy between children whom their mother received *Dadih* in pregnancy and those whom were not received. **Methods:** In this case control study we investigated 30 children whom their mother received *Dadih* during six months of pregnancy and 30 children whom were not as controls. When children turned one-year old, the lip prints were taken. **Results:** Results showed that type I had dominated in almost all quadrants of lips on both controls and interventions. Type II had found as the second type of lip pattern that can be found, but there was difference in pattern between interventions and controls. **Discussion:** Resemblance of lip pattern between parent and child to some extent in spite of being unique and individualistic throws an open area which can be explored for establishing paternity, being simple and inexpensive. The result showed significant association of lip pattern and probiotic administration, especially type II in upper middle quadrant. **Conclusion:** Further study is needed with larger samples and serial taken of lip print should be considered.

1. Introduction

Probiotics are defined as non-pathogenic microorganisms that give benefits to the host by influencing the intestinal micro-flora (Brouwer *et al.*, 2006). The probiotic microorganisms consist mostly of the strains of the genera *Lactobacillus* and *Bifidobacterium* (Soccol *et al.*, 2010).

It has been suggested that administration of probiotics may have therapeutic and/or preventive benefits in several skin diseases (Brouwer *et al.*, 2006). Most commonly formulated as fermentation products, probiotics counter pathogenic bacteria,

support barrier function, and contribute to the regulation of the innate and adaptive immune responses (Kober and Bowe, 2015).

Dadih is Indonesian traditional fermented buffalo milk and is believed to be beneficial for human health. This product is famous traditional food in West Sumatera, Jambi and Riau. It contained of *Lactobacillus sp.*, predominantly *Lactobacillus plantarum* (Usmiati and Setiyanto, 1988).

Cheiloscopy, or lip print, is one of forensic methodology in case of identification. Lip prints are normal lines

and fissures in the forms of wrinkles and grooves present in the zone of transition of human lip, between the inner oral labial mucosa and outer skin or vermilion border (Fernandes, 2017). Many studies had been done on purpose of developing this technique.

We carried out a case control study, to investigate lip print pattern between children whom their mother received dadih along pregnancy and those whom were not received.

2. Materials and methods

2.1. Materials

2.2.1. Samples

Sixty mothers who were pregnant at adjacent time were selected. They were divided into two groups. Group A received *Dadih* for about six months since three month of pregnancy, while group B did not get *Dadih* during pregnancy. Group A consumed *Dadih* one cup every day, each mother received same portion and they must finish it off. All of mothers in group A stopped consuming *Dadih* after labored.

2.2. Methods

In this case control study we investigated 30 children whom their mother received dadih since three-month pregnancy until labored and 30 children whom were not as controls. Subjects with known hypersensitivity to lipsticks were not included. When children turned one-year old, the lip prints were taken. Lip prints were collected using cellophane tape and recorded in white chart paper (Sandhu et al., 2012). All six quadrant of lip were observed. The Suzuki and Tsuchihashi's classification was used to define the lip patterns and the data were statistically analyzed. We used the Chi-Square test for statistical analysis.

3. Results and discussions

3.1. Results

Sixty mothers and their children took part on the study. Thirty mother received dadih for six month during their pregnancy, while others did not. The cheiloscropy of their children was taken at age year and half until two years old.

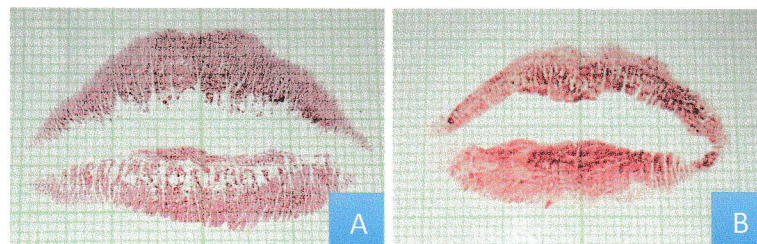


Figure 1. Lip print patterns in children, both interventions and controls group showed type I as the most common type. **A.** Lip print of child in interventions group (group A). **B.** Lip print of child in controls group (group B).

Table 1. Comparison of lip print patterns between interventions group and control.

Type	Controls												Interventions											
	1 (UR)		2 (UM)		3 (UL)		4 (LL)		5 (LM)		6 (LR)		1 (UR)		2 (UM)		3 (UL)		4 (LL)		5 (LM)		6 (LR)	
	n	F	n	f	n	f	n	f	n	f	n	F	n	f	n	F	n	f	n	f	n	f	n	f
Type I	25	83.3	24	80.0	21	70.0	9	30.0	28	93.3	11	36.7	18	60.0	20	66.7	18	60.0	13	43.3	28	93.3	11	36.7
Type I'	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type II	4	13.3	2	6.7	7	23.3	16	53.3	0	0.0	15	50.0	11	36.7	7	23.3	11	36.7	16	53.3	0	0.0	15	50.0
Type III	1	3.3	1	3.3	1	3.3	5	16.7	0	0.0	4	13.3	1	3.3	2	6.7	1	3.3	1	3.3	0	0.0	4	13.3
Type IV	0	0.0	2	6.7	1	3.3	0	0.0	2	6.7	0	0.0	0	0.0	1	3.3	0	0.0	0	0.0	2	6.7	0	0.0
Type V	0	0.0	1	3.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Results showed that type I had dominated in almost all quadrants of lips on both controls and interventions (Figure 1). Especially controls children, five quadrants of lips had type I pattern with percentage 93,3%. Meanwhile in interventions, type I can be seen in four region with percentage 83,3%. All of lip print of children can be read and none of them had type I' pattern. Type II had found as the second type of lip pattern that can be found, but there was difference in pattern between interventions and controls. Type II was found in all quadrant for intervention and controls. Type III and IV were not found in all quadrant of interventions and controls. Only one control that show type V in lip pattern.

Table 1. showed that lip patterns on type II in interventions group tends to be higher than controls. Table 2. showed that there is association between lip patterns and probiotic administration on type II in upper middle quadrant. In upper middle quadrant (quadarant 2), type II can be seen in controls as much as 20% while in interventions show higher percentage about 80% with p value 0,04.

Table 2. Association of lip print patterns and Dadih administration

Type II quadrant 2 (UM)	Total	Controls		Interventions		p value
	n	n	f	n	f	
Negative	50	28	56.0%	22	44.0%	0.04
Positive	10	2	20.0%	8	80.0%	

3.2. Discussions

The wrinkles and grooves on the labial mucosa in an individual form a characteristic pattern. Lip print shows that in fact lip prints do follow a hereditary pattern but they are individualistic, each possessing its own unique characteristics. Resemblance of lip pattern between parent and child to some extent in spite of being unique and individualistic throws an open area which can be explored for establishing paternity, being simple and inexpensive. In this study lip print of one until two-year-old children

had been taken and observed between children whom their mother received dadih in pregnancy and whom were not. It showed that that type I had dominated in almost all quadrants of lips on both controls and interventions. This is similar with study Kapoor et al., 2017. One of literature said that it is better to take lip print of children at age fifteen year old because at those around age, the lip pattern of each individual should not show any changes. Meanwhile, another literature said, development of lip and its pattern was completed around organogenesis in gestation.

There is association between lip patterns and probiotic administration on type II in upper middle quadrant. This research inline with previous study that supplementation of probiotic in perinatal maternal is effective to reduce incidence atopic dermatitis (Simpson et al., 2015).

4. Conclusions

Cheiloscopy is a simple and less expensive technique, which can be used as an additional tool as a screening of genetic marker. Administration of dadih are expected can be one of modality to reduce probability of several genetic skin disorder such as atopic dermatitis, psoriasis and acne will not be downgraded from mother to child. The result showed significant association of lip pattern and probiotic administration, especially type II in upper middle quadrant. Further study are needed with larger samples and serial taken of lip print should be considered.

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