SUMMARY

The nutritional immunological, economic and psychological advantages of breast feeding are well recognized.

Wallace and Rabin (1991), found a significant increase in lactic acid concentration in breast milk following maximal exercise and they noticed that infants of some mothers refuse to nurse during the post exercise feeding.

Our study was carried out to compare infant acceptance of pre and post exercise breast milk and to correlate the infant response to the lactic acid concentration in milk.

It is carried out among the healthy lactating women between 2 and 6 months post partum and their healthy infants who attended the vaccination clinic at Benha University Hospital.

This study was carried out on 60 mothers and their infants. We classified them into 2 groups :

Group (1) :

(thirty mothers) with full breast.

Group (2) :

(thirty mothers) with empty breast (evacuate the breast before exercise).

Good clinical examination and all parameters including residence age, weight, Height of the mothers and infants were collected. ECG was done for each women before exercise then the mothers performed severe exercise using a motor tridmill, the milk samples was taken at rest, before exercise, post exercise. Infant taste test were done. The infant acceptance of the milk was measured by the mother perception.

In our study we found that the concentration of lactic acid increased in the samples of 10,30,60 and 90 min. with the peak concentration at 30 min. in both the studied groups.

$\bar{X}$ and S.D. at 30 min. were 2.64 ± 0.33 mmol/l in the group of empty breast and were 2.87 ± 0.13 mmol/l in the group with full breast. The difference was highly significant ($P < 0.01$). Also we found that lactic acid concentration was higher in milk of mothers with full breast than in milk of mothers with empty breast.

Also we found that the concentration of lactic acid was higher in the refused milk at 10 min and 30 min in the milk of the two studied groups and the lactic acid concentration was high not only in the refused milk but also in the accepted milk so exercise may not only increase lactic acid concentration in milk of lactating mother but also increase other substances that may change the taste of the milk.

In our study we found a significant correlation between concentration of lactic acid in milk of pre and post exercise ($P < 0.05$) in both studied groups at different samples except at 120 min.

Also we found that lactic acid increased following maximal exercise at 10 - 30 - 90 min. and returned to about normal at 120 min.