SUMMARY

The present work was carried out to assess the immunological significance of breast milk to the infant and to the mother, and to isolate and identifiy the micro-organisms present in expressed human milk whether from normal woman or in cases of mastitis.

The study was conducted on 121 lactating women, 106 of them were normal and the other 15 women were suffering from lactational mastitis.

Immunoglobulins IgA, IgG & IgM were measured by the technique of single radial immunodiffusion using specific antisera. Phagocytic activity of leukocytes was performed by using heat-killed Staphylococcus aureus and Giemsa stain which was used to detect intracellular Staphylococci. Isolation and identification of organisms present in expressed breast colostrum and milk samples was performed by routine work (culture & staining and biochemical reaction). Antibiotic excreted in colostrum and milk was detected by plate agar diffusion method.

The present study revealed that:

* The major classes of immunoglobulins (IgA, IgG & IgM) were present in the milk throughout the whole period of lactation (18 months), it was observed that the highest concentration of immunoglobulins was present in the early colostrum.

* There was a significant elevation in the concentration of IgG and IgM in the milk samples collected from patient suffering from lactational mastitis. This elevation in the immunoglobulin concentration may play an important role in limiting breast infection.

* Leukocytes were present in colostrum in counts similar to that present in blood. The macrophages represented the main type of cells. Polymorphonuclear leukocytes and lymphocytes were also present. The phagocytic activity of milk leukocytes was higher than that of blood leukocytes.

Milk and colostrum were contaminated with different types of bacteria. The colony forming unit/ml was less than $1X10^5$ per milliliter. It was similar in both colostrum and milk samples. 70% of the isolated organisms

were commensal organisms largely represent the skin flora, as coagulase negative Staphylococci micrococcus and diphtheroid. Potentially pathogens as Staph aureus, E- coli, Klebsiella, Streptococcus viridans and Streptococcus faecalis were also isolated from colostrum and milk samples. In milk samples collected from women suffering from lactational mastitis, skin flora formed 80% of the isolated organisms. The colony forming unit/ml and the type of isolated organism was nearly similar to that of normal milk samples, except in one sample in which Staph aureus was isolated with high colony forming units>$1X10^5$ per milliliter and excess number of pus cells.

Penicillin and ampicillin were excreted in milk with very low level, but Cephradine was not detected because its level in milk is very low (undetectable level).

We can conclude that colostrum and milk may protect the infant as well as the breast itself from infection, because milk and colostrum provide the baby with a significant amount of immunologiaal factors

(immunoglobulins and active phagocytic cells). Also milk must be boiled before being administered to the baby if not used at the time of collection.