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# DETECTION AND BIOASSAY OF MONOCEF IN BREAST MILK OF LACTATING MOTHER

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**ABSTRACT**

Six milk samples from mother taking monocef were taken for detection of antibacterial activity against monocef sensitive strain of Staphylococcus aureus at interval of 08 hours after the injection of monocef . Antibacterial activity was seen in all samples. Bioassay of monocef was carried out in all the samples. Comparable results were seen in Bioassay studies. The maximum quantity (1.6 mg/ml) of monocef was seen after 08 hours.

**Key Words** — *monocef, Staphylococcusaureus, Antibiotic residue, Breast milk.*

## Introduction

Milk is the maternal lactating secretion. It is the first and sole food for infants for certain period of time. Breast feeding strongly encouraged as it offers protection against number of infectious diseases, especially in developing countries. It contains all essential nutrients required for growth and disease resistance. The antibiotic residues can also be detected in milk , especially when mother is taking antibiotic for treatment purpose. The amount of antibiotic in breast milk is a variable fraction of the maternal blood level that is proportional to the maternal oral or parenteral dose of antibiotic.

In the present study an attempt was made to detect and assay of antibiotic residue (monocef) in lactating mothers on monocef treatment . The study includes cessarain patients taking monocef for treatment.

## Materials and Methods

For this study six mothers subjected to cessarian and treated with monocef were selected .For detection of antibiotic residue, milk samples were collected from mothers daily in morning and evening of the same day.The time interval between two sample was eight hours after the injection of monocef . The milk samples were collected in sterile bulbs taking due precautions. Antibacerial activity of milk was studied against standard monocef sensitive strain of *Staphylococcus aureus* by disc diffusion method [1]. A 6 mm disc soaked in milk was placed on lawn culture of *Staphylococcus aureus.* A monocef disc was used with all samples as a control. Bioassay studies were

carried out on two milk samples by using standard well method [2] Using various known concentrations of monocef to quantitate the amount of monocef in milk samples. Milk sample from mother not taking any antibiotic was used as control for bioassay.

## Result and Discussion

All milk samples showed zone of inhibition against *Staphylococcus aureus* after eight hours after the injection of monocef. In six samples the average zone diameter was 12 mm after eight hours of injection . In first three samples zone diameter were 10 mm, 13mm and 11mm after eight hours of injection . In last three samples , maximum zone of inhibition was seen after an interval of eight hours were 14mm, 11mm and 13mm. **(Table no. 1)**. The increase or decrease of zone diameter as observed in this study may be attributed to the rate of secretion and rate of inflow of antibiotic from blood to the breast during biosynthesis of milk. The factors such as lipid solubility, molecular weight, degree of protein binding, degree of ionization, secretion dosage, renal function ,etc. may also be the other reason for this [3,4]

The quantity of antibiotic residues found in first three samples were 1.1 mg/ml, 1.4 mg/ml and 1.2 mg/ml after eight hours of injection . However in last samples the quantity of antibiotic residues found were 1.6 mg/ml, 1.2 mg/ml and 1.5 mg/ml of an interval of eight hours respectively **(Table no. 2).**These results are comparable with the results of detection studies **(Table no. 1) .** These results show that antibiotics which are given to mother for treatment purpose are secreted in breast milk in a concentration which depends upon various factors and may offer protection against in infants. Monocef is usually active against the *Staphylococcus aureus* both in vitro and clinical infections.

**Table No. 1 Antibacterial activity of milk samples of various time intervals against *Staphylococcus aureus***

| Samples No. | Time interval | Zone of inhibition |
|---|---|---|
| 01 | 08 Hours | 10mm |
| | 08 Hours | 13mm |
| | 08 Hours | 11mm |
| 02 | 08 Hours | 14mm |
| | 08 Hours | 11mm |
| | 08 Hours | 13mm |

**Table No.2 Bioassay of Monocef in milk samples of mother on monocef treatment**

| SampleNo. | Time interval | Zone Diameter | Quantity of monocef(mg/ml) |
|---|---|---|---|
| 01 | 08 Hours | 10mm | 1.1 |
| | 08 Hours | 13mm | 1.4 |
| | 08 Hours | 11mm | 1.2 |
| 02 | 08 Hours | 14mm | 1.6 |
| | 08 Hours | 11mm | 1.2 |
| | 08 Hours | 13mm | 1.5 |

## REFERENCE

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