Hypertension affects approximately 10% of pregnant women, being included among the leading causes of hospitalization, maternal and perinatal mortality. The Breastfeeding is capable of conferring protection to neonates for various infections due to the presence of bioactive components such as cytokines, and cells. The cytokines interferon-gamma (IFN-γ) and "transforming growth factor" (TGF-β) act as immunomodulators on milk phagocytes. Thus the aim of this study was to verify the modulation of cytokines INF-γ and TGF-β on the functional activity of phagocytes in the presence of EPEC. We used 72 samples of breast milk from groups (normal and hypertensive) in day and night periods and at three times postpartum (colostrum, transitional and mature). It was observed that cytokines modulate the rates of phagocytosis, microbicidal activity and that blood pressure increased the functional activity of cells regardless of the hour of collection. When comparing breast milks from normal and hypertensive patients, were observed that the microbicidal activity was higher in the milk of mothers with hypertension treated with cytokines in both periods, except the cells of the mature milk of the control group that showed a higher rate at night. The IFN-γ showed a higher ability to stimulate the phagocytes, independent of the maturation stage of the milk, compared to TGF-β. There was a lower functional activity of phagocytes from the milk of mothers with hypertension during the night, when incubated with INF-γ. TGF-β stimulated the functional activity of phagocytes, especially during the daytime, and in transition milk, regardless of group and sampling period.