

evaluation of effect of mask on result of non stress test in high risk pregnant mothers referred to the perinatology clinic of Alavi hospital in Ardabil province

Abstract

Background: The use of fetal heart monitoring dates back to the 1960s, and it is actually the first test to check the health of the fetus, which is widely accepted due to its low cost and availability. In high-risk pregnant mothers, the NST test is used to find out about the health status of the fetus, and if the test result is not reliable, further investigations will be necessary. Various factors such as hypoxia and acidemia have an effect on the test results. Due to the covid19 virus pandemic and the use of masks has increased, which can lead to a decrease in oxygen in the air received by a pregnant mother.

Aim: Considering the existence of few studies on the effect of masks on high-risk pregnant mothers, the aim of this study was to evaluate the effect of masks on NST and hypoxia in high-risk pregnant mothers.

Materials and Methods: This study was a semi-experimental before and after method that after obtaining the consent of the pregnant mothers who were selected as samples, if the pregnant mother wears a mask while visiting in an isolated room with proper ventilation, she takes off her mask and rests for 5 minutes. Then, in the first stage, 20 minutes of NST was taken from this mother without a mask, and then three-layer surgical masks prepared by the researcher were given to the pregnant mother. After 5 minutes of wearing the mask, the pregnant mother was given 20 minutes of NST in the second stage. It was taken with a mask. In both stages, the mother was in left lateral position. The NST device simultaneously measured SPO₂, mother's heart rate, and mother's blood pressure.

Results: According to the survey of 200 high-risk pregnant mothers before and after wearing the mask, the frequency of non-reactive result increased from 16 cases to 138 cases and the frequency of hypoxia increased from 2 cases to 103

cases. The significance of the relationship between the mask and the test result was 0.018, and the significance of the relationship between the mask and hypoxia was 0.001. which showed the effect of the mask on hypoxia and the result of the test without stress. The significance of preeclampsia after the intervention was 0.033, which showed that the mask has a greater effect on preeclampsia.

Conclusion: According to the results of this study, using a mask is effective on the results of non stress test and hypoxia in high-risk pregnant mothers. The effect of the mask on the result of the non stress test and hypoxia is greater in pre-eclampsia, but it is not different in other examined diseases. The effect of the mask on hypoxia and the results of the non stress test are not different in different age groups and different BMI groups.

Also, in this study, we concluded that the frequency of the non-reactive test result before wearing the mask is higher in high BMIs. But after wearing the mask, this frequency is more in low BMIs.

Key words: high risk pregnancy , hypoxia , face mask, non stress test