## Evaluation Of The Effect Of Hygienic Isotonic Nasal Shower On Anterior Active Rhinometry Parameters In Pregnant Women.

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Annotation: Maternity protection is one of the main directions of health care in Uzbekistan. Pregnancy causes changes in the physiological parameters of all organs and systems of the female body, including the upper respiratory tract (URT) [2;7;9]. A pregnant woman's nose performs all its functions, but changes in a woman's body during pregnancy also have an effect on the condition of the nose. The ideopathic disorder of nasal breathing in women during pregnancy is polyetiological and develops under the influence of many factors. One of the most important causes of nasal breathing disorders during pregnancy is the development of hormonal changes in the female body.

Keywords: nasal, ideopathic, progestrone, tumor development.

**Introduction.** This theory is also supported by the discovery of estrogen and progestrone receptors in the mucous membrane of the lower nasal shells after conchotomy [1;3;6]. According to various sources, vasomotor variability associated with nasal congestion and gestational age was observed in 30–72% of women. The clinical signs of rhinitis in pregnant women depend on a number of factors specific to the pregnant woman's body, such as increased circulating blood volume, increased progesterone levels, smooth muscle relaxation of the nasal vessels under the influence of estrogens, and tumor development. Clinical signs of rhinitis appear in 20% of women in the 1st trimester of pregnancy, intensify during fetal development and stop appearing 2 weeks after delivery [8;10]. Impaired nasal breathing during pregnancy leads to the development of hypoxia in the mother's body and the emergence of unfavorable conditions for fetal formation. Sleep disorders and rhinopathy are complications of nasal breathing disorders that are risk factors for the development and progression of hypoxia, arterial hypertension, and preeclampsia [4;5;11]. The authors say that any pathogenetic stage that causes hypoxic changes in the mother's brain has a negative impact on the health of the mother and fetus. Treating "pregnant rhinitis" is a difficult task. The main problem is the restoration of nasal breathing, nasal congestion to prevent systemic effects on the body and side effects of drugs used during pregnancy.

In this regard, **the aim** of this research work was to study the evaluation of the effect of hygienic isotonic nasal shower on anterior active rhinometry (AAR) parameters in pregnant women.

**Material and methods.** The research was conducted in 2018-2021 in the department of otorhinolaryngology of the Bukhara Regional Multidisciplinary Medical Center and the Department of Pregnancy Pathology of the Mohi Xosa maternity complex in Bukhara. The study examined 75 pregnant women (1-2-3 trimesters), as well as 10 non-pregnant students of the Bukhara State Medical Institute who did not suffer from upper and lower respiratory diseases. 1 study group included 25 women aged 18–35 years (mean age =  $24.96 \pm 2$  years). The pregnancies studied were first or second (first pregnancy in 72% of patients, second pregnancy in 28% of patients). The body weight of women in the first trimester of pregnancy at the time of the study was 45–75 kg, with an average of 55.66  $\pm$  2.2 kg. Patients in the second trimester of pregnancy have a body weight of 48-84.2 kg (average =  $60.7 \pm 2.6$  kg), in the third trimester - 56-86 kg (average -  $66.4 \pm 2.1$  kg).

**Results.** In the study, only women in group 3 rated their nasal breathing as free (0 points). Women in group 1 rated their nasal breathing as 1-2 points, averaging  $1.52 \pm 0.2$  points. Women in group 2 rated nasal breathing as 1–3 points, averaging  $2.24 \pm 0.2$  points (p <0.05 compared to groups 1 and 3). Subsequently, in the second and third trimesters, the average values of nasal breathing in women in groups were insignificant (unreliable), in groups 1-2 - improvement of nasal air permeability, and in the third group - worsening (Diagram 1), which suggests that patients' subjective feelings associated with respiration should be viewed as a constant indicator.

Diagram №1. Average indicators of subjective assessment of nasal breathing during pregnancy (points)



The indicators of AAR in pregnant women in the study groups are given in Table1.

Groups	I three months		II three months		III three months	
	VFR cm <sup>3</sup> /c	GR Pa / cm <sup>3</sup> /c	VFR cm <sup>3</sup> /c	GR Pa / cm <sup>3</sup> /c	VFR cm <sup>3</sup> /c	GR Pa/cm <sup>3</sup> /c
1-group	579,8 ± 37,4	0,56 ± 0,06	588,0 ± 46,7	0,56±0,09	670,5 ± 61,5	0,44 ± 0,03
2-group	574,6 ± 50,5	0,67 ± 0,15	578,6 ± 81,6	0,71 ± 0,18	671,8 ± 64,4	0,53 ± 0,11
3-group (control)	850,5 ± 73,8	0,39 ± 0,03	838,0 ± 82,6	0,4 ± 0,04	773,6 ± 62,02	0,41 ± 0,03

Note: p <0.05 for the first and second groups

According to the data obtained, at all stages of the study, AAR indicators were found to be better in the third group than in the 1st and 2nd groups through nasal breathing. Although a reliable difference was found in the subjective assessment, it was noted that the average values of groups 1 and 2 were almost the same.

Table 2. Mean values of VFR (sm<sup>3</sup>/s) in women who complained of difficulty breathing through the nose

Subjective assessment of nasal	1- 8	group		2 – group		
breathing	I trimester	II trimester	III trimester	I trimester	II trimester	III trimester
1 ball	21,8±39,1	29,5±72,9	93,8±70,2	50,5 ±23,1	50,3 ±47,2	)0,3±16,3
2 ball	31,6±42,7	26,5±54,6	10,6±16,7	23,5±26,5	54,3±64,6	12,9±65,8
3 ball	no	no	no	53,8 ±62,3	36,1±48,3	17,4 ±52,2

*Note:* Group 1 nasal congestion is p < 0.05 for women rated 2 points.

Nasal breathing during gestation was rated at 2 points, with nasal barrier curvature and SVR in women with objective nasal breathing free or in accordance with AAR (Table 2) mild nasal congestion, compared with women with "pregnant rhinitis" is better.

Table 3. Secretory	v activity	of the nasal	mucosa (g	g/min)
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Groups	I trimester	II trimester	III trimester
1-group	$0,09 \pm 0,01$	$0,14\pm0,01$	$0,16\pm0,1$
2-group	$0,1\pm0,02$	0,1 ± 0,02	$0,\!07\pm0,\!01$

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3-group	$0,11 \pm 0,02$	$0,11 \pm 0,01$	$0,12 \pm 0,02$

*Note: Iuch in group 1 is <0.05 relative to the period in the month.* 

VFR was found to be 882.4  $\pm$  32.6 cm<sup>3</sup>/c on an average of 882.4  $\pm$  32.6 cm<sup>3</sup>/c when the UQ was 0.27  $\pm$  0.08 cm<sup>3</sup>/c in pregnant women with normal breathing with a subjective nose and the UQ was 0.71  $\pm$  0.3 cm<sup>3</sup>/c. After 28 days of irrigation therapy, 91.6% of patients felt a significant improvement in nasal breathing. UHO increased significantly: 921  $\pm$  97 cm<sup>3</sup>/c, UQ 0.29  $\pm$  0.17 cm<sup>3</sup>/c relative to baseline.

Irrigation therapy did not affect the secretory activity of the mucosa. It should be noted that no significant differences in the secretory activity of the nasal mucosa were found in women with "pregnant rhinitis" and in the control group. Thus, the mean secretory activity in the control group averaged  $0.12 \pm 0.02$  g/min, while in the study group the secretory activity of the mucosa was  $0.16 \pm 0.03$  g/min and  $0.15 \pm 0.02$  g/min, respectively formed.

In the control group, nasal excretion pH-metric showed a change from weak acidity to weakly alkaline and averaged 7.1  $\pm$  0.4. The cytological composition of nasal secretions consists of epithelial cells, leukocyte cells, neutrophils, lymphocytes, macrophages and plasma cells. In this, more lymphocytes were detected. The mean cytological formula of nasal discharge in pregnant women with free breathing through the nose was as follows: epitheliocytes 3.8  $\pm$  1.1 c./f.v; neutrophils 3.1  $\pm$  1.3 c./f.v.; lymphocytes 5.6  $\pm$  0.8 c./f.v.; macrophages 1.9  $\pm$  0.4 c./f.v; plasmocytes 1.3  $\pm$  0.6 c./f.v.

In the presence of "pregnant rhinitis", the pH of the nasal discharge was found to be  $6.8 \pm 0.3$ . When "pregnant rhinitis" was diagnosed, the mean cytological formula of nasal discharge was as follows: epitheliocytes  $4.3 \pm 1.4$  c./f.v.; neutrophils 6.1  $\pm 1.1$  c./f.v; lymphocytes  $1.2 \pm 0.6$  c./f.v.; macrophages  $0.9 \pm 0.7$  c./f.v.; plasmocytes  $1.3 \pm 0.4$  c./f.v.

In "pregnant rhinitis" after irrigation therapy, the acidity of the nasal passages was noted in the range of 6-7, on average -  $6.7 \pm 0.3$ . The cytological formula was as follows: epithelial cells  $4.1 \pm 1.5$  c./f.v.; neutrophils  $2.3 \pm 0.7$  c./f.v.; lymphocytes  $4.8 \pm 0.7$  c./f.v.; macrophages  $1.1 \pm 0.4$  c./f.v.; plasma cells  $1.6 \pm 0.3$  c./f.v.

**Conclusion.** Thus, the study of the effect of intranasal irrigation therapy in "pregnant rhinitis" has shown that it is effective in increasing the number of lymphocytes in the airways and nasal secretions. Subjective nasal breathing was significantly improved in 91.6% of patients, and the acidity and cytological structure of the nasal passages were found to be similar to those of normal-breathing pregnant women.

Regular use of a nasal shower based on the method of filling the nasal cavity with a warm isotonic saline solution helps to objectively improve nasal breathing.

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