



## A STUDY OF IMPROVEMENT OF CERVICAL MUCUS WITH GUAIFENESIN IN INFERTILITY PATIENTS:

### Gynaecology

**Dr. V. Usharani\*** Associate Professor, Mahavir Institute of Medical Sciences. \*Corresponding Author

**Dr. D. Sai Vittal** Associate Professor, Malla Reddy Institute of Medical Sciences.

### ABSTRACT

#### Aim:

1. To assess the effect of Guaifenesin in improving the cervical mucus in patients with infertility due to cervical factor.
2. It thins out cervical mucus and reduces viscosity. It should be taken 5 days prior to ovulation and continued until ovulation has occurred.
3. A total of 40 couples with minimum period of 1 year infertility were included in this study. The study was conducted in MIMS, Vikarabad.

#### Material & Methods:

- A total of 40 couples were included in this study.
- Infertility with anovulation with or without poor cervical score were included in the study.

#### Results :

Pregnancy Rates after Two or Three Cycles

- Group I: 4/1233%
- Group II: 8/2433%
- 24 out of 36 patients showed marked improvement in PCT and six patients had slight improvement in mucus quality and PCT.
- No improvement seen in Six Patients.

#### Conclusions:

1. Guaifenesin improves cervical mucus and thereby fertility rates.
2. It is a very safe drug with less side effects only three patients reported nausea and GI upset in our study.
3. Cost effective when compared to other infertility drugs.
4. Easy to infer the results and can be done as OP procedure.

### KEYWORDS

Infertility, Post coital test, Hostile Cervical Mucus, Semen analysis, Poor Cervical Score.

#### INTRODUCTION:

Guaifenesin is an expectorant capable of increasing respiratory tract fluid. It is a common ingredient of many antitussive preparations 1-4. A study was designed to see whether this agent could also improve cervical mucus as manifested by improved sperm survival and fertility. The results indicate that guaifenesin improves cervical mucus and thereby fertility. Mechanism of Action of Guaifenesin is as follows; It thins out cervical mucus and reduces viscosity. It should be taken 5 days prior to ovulation and continued until ovulation has occurred. It stimulates mucus glands to produce abundant cervical mucus and used in IVF centers. It helps to loosen the cervical mucus 5,6. Thin mucus helps the sperm to penetrate the egg easily. Tablet form of Guaifenesin is preferred over syrup form. Usually it is sold in combination with decongestants/Antihistamines. These agents can dry up cervical mucus thus defeating the purpose. While on treatment one should drink lots of water to produce more cervical mucus 7,8.

#### Protocol

Base line semen analysis should be normal as suggested by WHO 2010.

- Volume 1.5ml (1.4 – 1.7) or more.
  - Sperm Conc: 15 (12 - 16) million per ml or more Total Sperm count more than 39 (33 - 46) million per ejaculate. Motility: 32% (31 – 34) or more progressive forward motility.
  - Total (Progressive & nonprogressive) Motility 40% (36 - 42)
  - Morphology: 4% (3 – 4) or More Normal forms.
- Vitality: 58% (55 – 63) or more living

#### MATERIAL & METHODS:

- A total of 36 couples were included in this study.

#### Inclusion Criteria:

1. Age 20 to 30 Years.
2. Good sperm count.
3. 2 years of infertility.
4. Poor cervical score (Insler).

PCT was done before and after the treatment  
Patients are divided in to two groups

1. Infertility only with cervical factor – Hostile cervical mucus, Ovulation Normal.
2. Infertility with anovulation with or without poor cervical score.

Complete history is taken and physical examination done. Base line USG to exclude pelvic pathology and congenital anomalies is done. Ovulation is confirmed by follicular study. PCT with Poor cervical score. Tubal patency is confirmed by HSG or Diagnostic Laparoscopy. Patients with poor cervical score. Guaifenesin tablet (Barkeit) is given from 9th day for 5 days. One tablet tid 200mg/Oral. In patients with anovulation with or without poor cervical score. Clomiphene citrate was given from 2nd to 5th day (50 -100). Guaifenesin was given 1 tablet tid from day 9.

Post coital test was done 13<sup>th</sup> or 14<sup>th</sup> day, 1 to 2 days prior to ovulation. Patient should report within three hours following intercourse. She should avoid intravaginal medication or douching on that day. Cervix is exposed with speculum and mucus is aspirated with disposable syringe and placed over a glass slide and examined under the microscope for quantity, spin barkeit, ferning, sperm motility

#### Cervical Score:

	0	1	2	3
Mucus Quantity	None	Scanty	Drops	Abundant
Spin Barkeit	Absent <1cms	1 – 4 cms	4 – 8 cms	>8 cms
Ferning	Absent	Atypical Fern	Primary Fern	Secondary Fern
Cellularity	> 11 Cells/HPF	6 – 8 Cells	4 – 5 Cells	No Cells
Viscosity	Thick	Intermediate	Mildly Viscous	Normal Watery

#### Sperm Survival was tested as follows:

1. No Improvement: No Motile Sperms.
2. Marked Improvement: 3 – 5 Sperms/HPF with good linear progressive motion.

3. Slight improvement: 1 – 2 sperms/HPF Quality of motility is inferior (Rotatory).

#### Procedure:

- Mucus quality is judged before and after treatment.
- If the patient showed some improvement then the treatment is continued for a period of three months.
- Treatment was considered failure and stopped if there is no sperm survival after two cycles.

#### RESULTS:

	No. of Patients	Marked Improvement	Slight Improvement	No Improvement
	36	24 65%	6 16.5%	6 16.5%
Group I	12	8	2	2
Group II	24	16	4	4

#### Pregnancy Rates after Two or Three Cycles

- Group I : 4/12 33%
- Group II : 8/24 33%
- 24 out of 36 patients showed marked improvement in PCT and six patients had slight improvement in mucus quality and PCT.
- No improvement seen in Six Patients.
- Four Patients did not come for follow up.

#### Discussion and Conclusion:

1. Guaifenesin improves cervical mucus and there by fertility rates.
2. It is a very safe drug with less side effects only three patients reported nausea and GI upset in our study.
3. Cost effective when compared to other infertility drugs.
4. Easy to infer the results and can be done as OP procedure.
5. In our study marked improvement in cervical mucus is seen in majority of cases 66%.
6. Nearly 33% of the patients conceived in study group. This is comparable to other study groups
7. Clomiphene citrate is antiestrogenic when Guaifenesin is given along with clomiphene, it definitely improves cervical mucus and there by conception. In our study group conception occurred after 2 or 3 cycles. The duration of treatment can be shortened.

#### REFERENCES:

1. Medicine/Infertility/faq/part3/32k 17 Nov.2005.
2. Cooper Center for In-Vitro Fertilization.
3. Forums.obgyn.net/pregnancy/birth/P-B0207/2396html July 2002 – Shiny.
4. Check Adelson Wu 1982.
5. Islamic-world.net/sister/h19.html, Family Planning Page
6. Blasco L. Clinical approach to the evaluation of sperm cervical mucus interaction. Fertil steril 28,1133.
7. Treatment of cervical factor with combined dose of HMG fertility sterility 1980.
8. Infertility Issues by Jerome H. Check, M.D., H.G. Adleson, B.S., Chung-Hsis Wu, M.D. <http://www.pregnancy.org/article.php/sid=1102>