Research Article

INTRODUCTION TO TRANSPLANT-LESS STEM CELL THERAPY

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ABSTRACT

Stem cells are found in all multi cellular organisms. They possess the ability to renew themselves and also to differentiate into an intermediate cell type, which in turn, differentiate into diverse range of specialized cell types. The two broad types of stem cells are: embryonic stem cells and adult stem cells. In recently emerging medical research, technologies are under development, in which stem cells, obtained from variety of sources, are grown and are induced to differentiate into specialized cells by culturing and sub-culturing under specific conditions. Subsequent to initial differentiation, they are transplanted into diseased body for intended repair. This 'manual' transplantation involving physical handling of stem cells, for intended repair/cure, is still in very preliminary and mostly experimental stage. This paper introduces transplant-less stem cell therapy, eliminating need of physical handling of stem cells, to achieve similar results. Experiments on cotton, gram, mung, chauli etc., presented in this paper, reveal that stem cell genes can be triggered to activation, acceleration, retardation or turning off its activity through the use of homeopathic drugs. Hence, triggering the activation of adult stem cell genes, present in the body, through homeopathic drugs can directly, (without transplant), initiate and/or accelerate the process of differentiation into relevant cell types.

Keywords: Transplant, Stem cell, culturing, cystocele, rectocele, vocal cord.

INTRODUCTION

Stem cells[1] are found in all multi cellular organisms. They possess the ability to renew themselves and also to differentiate into an intermediate cell type, which in turn, differentiate into diverse range of specialized cell types. The two broad types of stem cells are: embryonic stem cells and adult stem cells. Embryonic stem cells can differentiate into all of the specialized embryonic tissues. Adult stem cells maintain and repair the tissues in which they exist. Plants also have two stem-cell populations[2,3,4]: one, apical meristem of the shoot and the root (can be called as embryonic stem cells of plant) other, lateral meristem (can be called as adult stem cells of plant). Flowers arise from the shoot lateral meristem (adult stem cells). The flowering process is regulated by a set of genes.

In recently emerging medical research, technologies are under development, in which stem cells, obtained from variety of sources, are grown and are induced to differentiate into specialized cells by culturing and sub-culturing under specific conditions. Subsequent to initial differentiation, they are transplanted into diseased (human/animal) body for intended repair.

This 'manual' transplantation involving physical handling of stem cells, for intended repair/cure, is still in very preliminary and mostly experimental stage. This paper introduces transplant-less stem cell therapy, eliminating need of physical handling of stem cells, to achieve similar results.

Earlier study has revealed that genes can be triggered to activation, acceleration, retardation or turning off its activity through the use of homeopathic drugs[5]. Experiments on cotton, gram, mung, chauli etc., presented in this paper, demonstrate that differentiations of embryonic stem cells of plant can be controlled through homoeopathic drugs. Similarly, experiments on adult cotton plants reveal that, flowering process in adult stem cells of plants can be triggered, before its scheduled time, by activation of relevant genes through homoeopathic drugs. This study can conclude that triggering the activation of adult stem cell genes, present in the body, through homeopathic drugs can directly, (without transplant), initiate and/or accelerate the process of differentiation into relevant cell types. Application of this technology in human body, in turn, can bring about the intended repair to the tissue/part. This is demonstrated with the help of cases of certain diseases/abnormalities, (in advanced stages), like large cystocele/rectocele (causing vault descent), polycystic ovarian disease, development of large nodules on vocal cord etc. which essentially required immediate surgery for cure/repair and which have been repaired/cured by activation/acceleration of stem cell activity through homoeopathic drugs.

MATERIALS, METHODS AND RESULTS

Ten samples under control conditions and ten samples under medication were used for the present study in each experiment (on plant body). Pots and plastic bags were used for sowing seeds. Locally available seeds of same (hybrid) variety were used for experiments under control as well as medication conditions. Distilled water was used for preparing medicated water. Plastic/glass containers were used for storing/keeping medicated water. CM

potency was used for preparation of medicated water for plants. Lower potencies were employed for preparation of medicated water for humans.

Controlling embryonic stem cell differentiations in plants

Samples of medicated water containing medicine (Abrotanum CM+Barayta Carb CM) in different concentration (1%, 2%, 3% and 4%) were prepared by adding 0.1 ml, 0.2 ml, 0.3 ml and 0.4 ml of drugs in 10 ml of pure (distilled) water. Process of germination of seed involves differentiation of embryonic stem cells (of plant). Hence, rate of germination of cottonseeds submerged (for 4 days) in distilled water and that in medicated water was evaluated. It is seen from Table 1 that rate of differentiation of stem cells of seeds in medicated water was highly accelerated, 3% concentration produced maximum rate of differentiation (Figure 1). Hence all the experiments, presented in this paper, were carried out using medicated water containing 3% drug concentration.

Figure 1: Extreme left sprout shows germination under distilled water. Other sprouts are germinated by medicated water containing drug in different concentrations.

Table 1: Medicated water containing 3% drug (Abrotanum CM+Barayta Carb CM) produced maximum effect on rate of germination

Average lengths of the sprouts in cm.				
Control	**Medicated water containing 1% drug**	**Medicated water containing 2% drug**	**Medicated water containing 3% drug**	**Medicated water containing 4% drug**
6.4	14.0	14.8	17.5 ⇧	12.4

Figure 2: Extreme left shows 72 hours old untreated cotton sprouts, centre one are those treated with single drug. Extreme right one are those treated with two drugs.

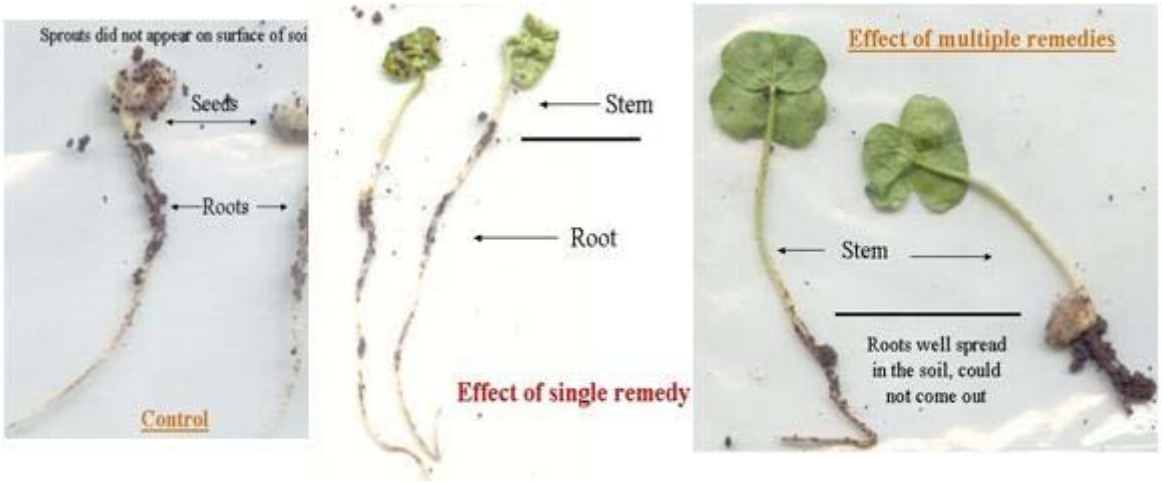


Table 2: Cotton seed medicated with two drugs germinates faster which indicates maximum differentiation rate of stem cells.

Average lengths (above surface of soil) of the 72 hours old cotton sprouts in cm.			
Sr. No.	**Control (without medication)**	**Medicated with single drug**	**Medicated with two drugs**
1	0	4.4	7.5 ⇧

Figure 4: Five day old seedlings. Left gram, centre mung and right chauli.

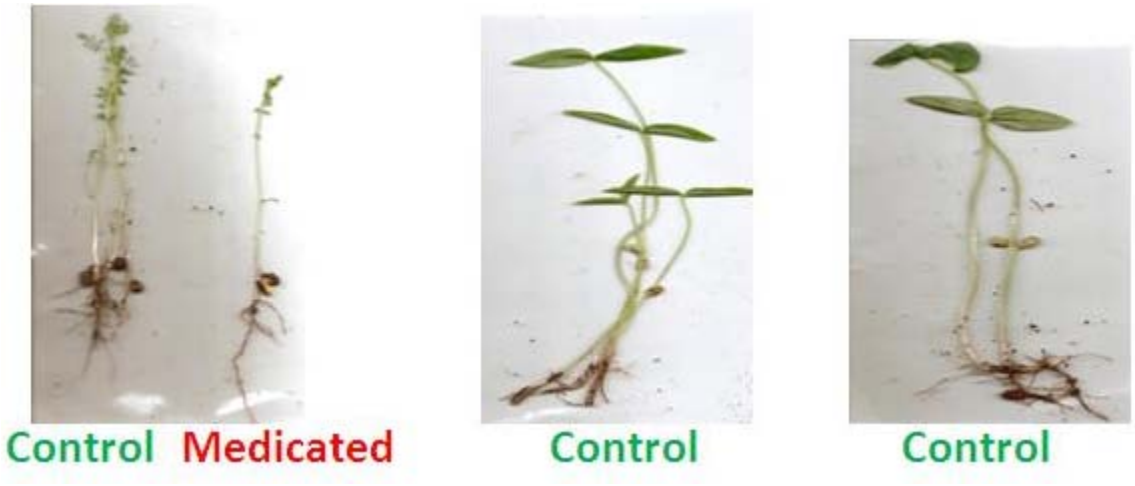


Table 4: Reduction in quantity of seeds germinated and retarded germination of seeds indicate reduction in the rate of differentiation of cells in gram and mung. In case of chauli there is no germination, indicating turning off of process of differentiation of cells.

	Gram		Mung		Chauli	
	Control	Medicated	Control	Medicated	Control	Medicated
Seeds sown	10	10	10	10	10	10
Seeds germinated	6	2 ↓	6	2 ↓	4	0 ↓
Average length of seedling	10 cm	6 cm ↓	10 cm	1 cm ↓	15	0 ⊘

For evaluating effect of use of multiple drugs, germination test was performed in soil [6]. The cotton seeds were divided in three groups. Seeds from first group were sown in soil without giving any treatment. Seeds from second group were soaked in medicated water containing single remedy (Abrotanum) before sowing in soil. Seeds from third group were soaked in medicated water containing multiple remedies (Abrotanum+Barayta Carb) before sowing.

It was observed that seeds, which received dose of two medicines, germinated very quickly and the sprouts appeared on the surface of the soil in 48 hours. Similarly, sprouts from seeds containing dose of single medicine appeared on the surface of the soil in 72 hours. Sprouts from untreated seeds did not appear on surface of soil even after 72 hours (Figure-2, Table-2). This indicates that rate of differentiation of embryonic stem cells of cotton seeds accelerated further by adding another drug for medication of distilled water.

For accelerating rate of differentiation of embryonic stem cells in wheat, medicated water containing Platina CM+Abrotanum CM was used. Wheat seeds were soaked, momentarily, in distilled water before sowing for trial under control conditions. Similarly, another set of wheat seeds was soaked in medicated water for test under medication before sowing. It was seen that medicated seeds germinated faster indicating enhanced rate of differentiation of cells (Figure-3, Table-3)

Figure 3: Germination of wheat. Left: Stem: Right Root

Table-3: Increase in quantity of seeds germinated and enhanced development of stem and roots indicate increase in the rate of differentiation of cells

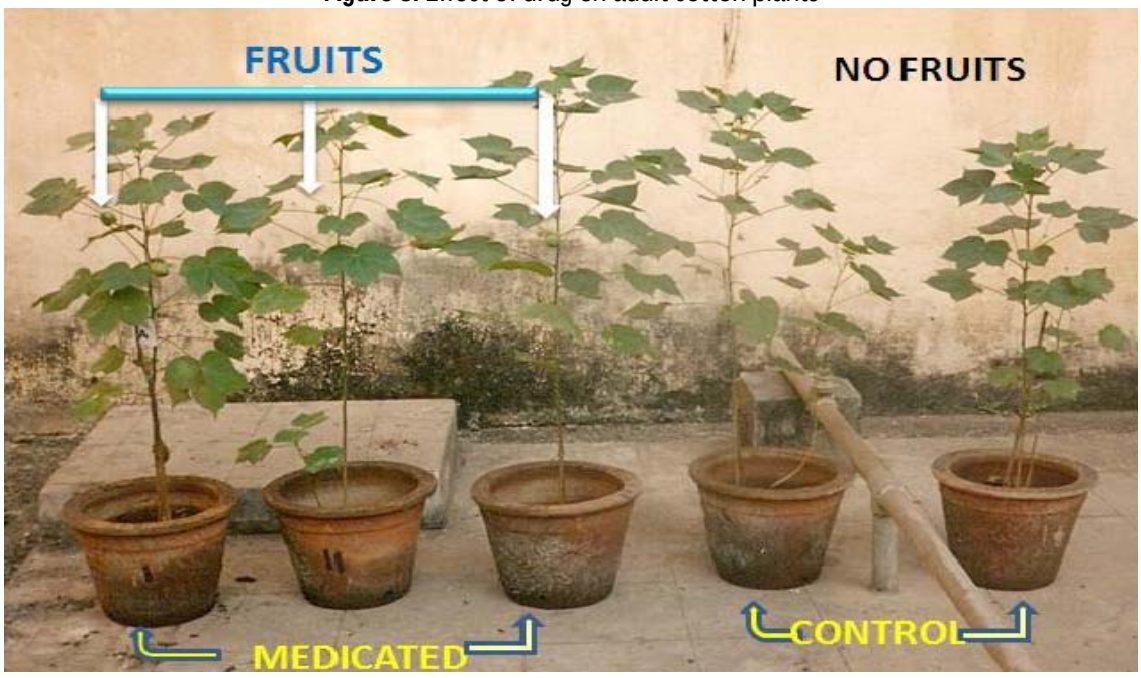
S. No		Control	Medicated
1	Total seeds sown	10	10
2	Seeds germinated	2	10 ↑
3	Average length of stem	15 cm	25 cm ↑
4	Average length of roots	8 cm	16 cm ↑

Retardation in the rate of differentiation of cells is evident from the decreased germination in mung and gram (Figure 4, Table-4) when the corresponding seeds are momentarily soaked in medicated water containing Acid Picric CM, and Abrotanum CM+Acid Picric CM, respectively, before sowing. Complete turning off of differentiation process in cells is seen in case of chauli seeds which did not germinate at all when momentarily soaked in medicated water containing Natrum Mur CM+Borax CM before sowing in soil.

Controlling adult stem cell differentiation in cotton plant

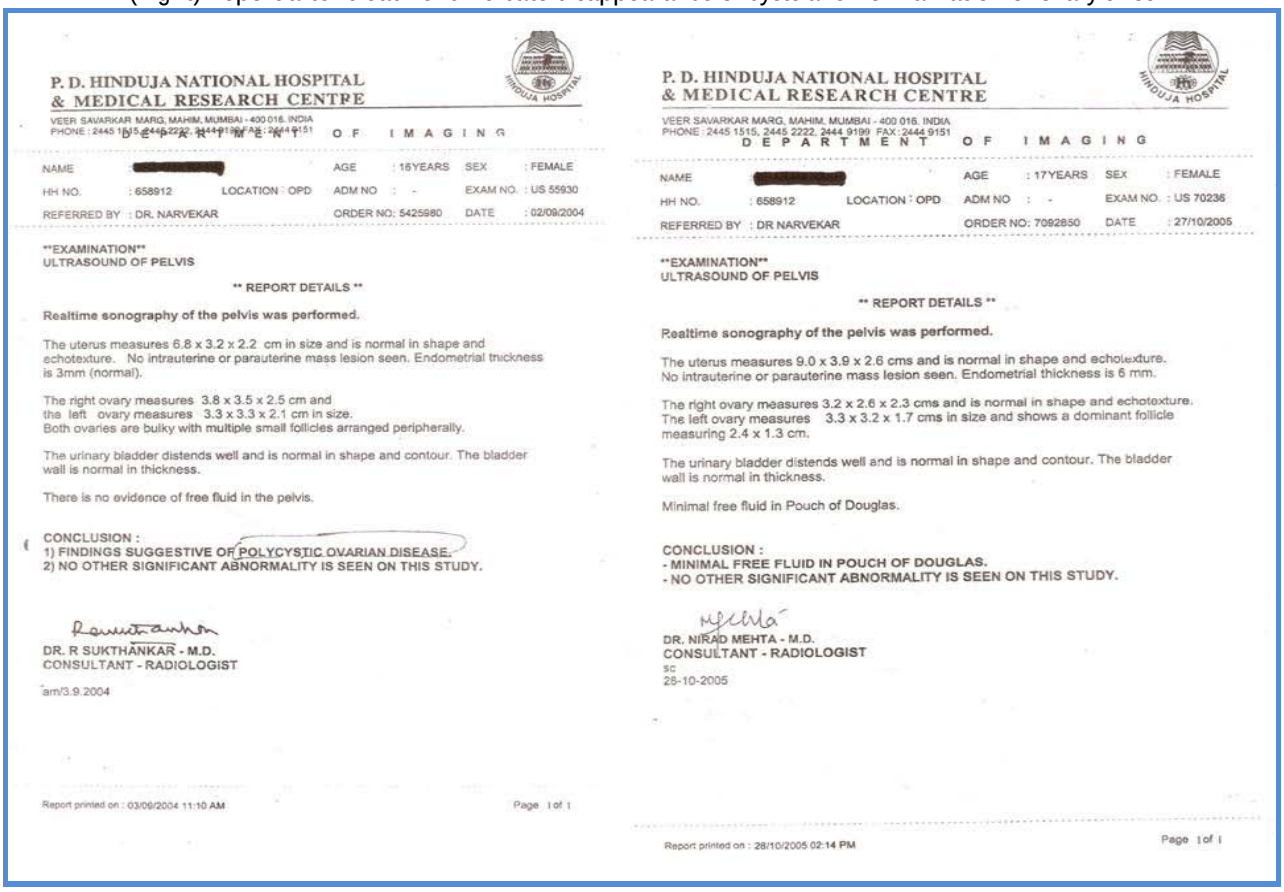
For conducting this test, untreated medium staple length hybrid cotton seeds were sown in pots. After 110 days, all the plants were fully grown, but flowering process was not started on any of the plants[6]. These plants were divided into two sets. Plants from first group were not given any treatment. Plants from second set were given a dose of Phosphorus CM by injecting 0.05 ml of medicated water into its stem. Within one week flowers appeared on treated plants. In the second week, fruits were seen on these plants (Figure-5). In case of untreated (control) plants, flowers appeared 45 days later. After 60 days from administration of first dose, second dose of same drug was given to plants under medication. This time also the flowering process was repeated, making it possible to get second crop. Thus the relevant drug has triggered the gene to activate the flowering process much earlier than its scheduled time. This also resulted in more than two fold increase of yield and improvement in quality of cotton[6].

Figure 5: Effect of drug on adult cotton plants



		Medication	Control
Sr. No.	**Date**	**Description of event**	**Description of event**
1	24/06/2003	Sowing	Sowing
2	14/10/2003	Injected 0.05 ml medicated water into the stem	No action
3	20/10/2003	Flowers appeared	No change
4	27/10/2003	Fruits appeared	No change
5	07/11/2003	Taken photographs	Taken photographs
6	17/11/2003	Plucked the cotton balls	No change
7	22/11/2003	Plucking continued	Flowers appeared
8	29/11/2003	Plucking completed	Fruits appeared
9	16/12/2003	Injected 0.05 ml of medicated water into the stem	No action
10	22/12/2003	Flowers appeared	No action
11	26/12/2003	Fruits appeared	No action
12	12/01/2004	No action	Plucking started
13	16/01/2004	Plucking started	Plucking continued

Figure 6: (Left) Report before treatment indicate polycystic ovarian disease
(Right) Report after treatment indicate disappearance of cysts and normalization of ovary sizes



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DEPARTMENT OF IMAGING

NAME [redacted] AGE : 16YEARS SEX : FEMALE
HH NO. : 658912 LOCATION : OPD ADM NO : - EXAM NO. : US 55930
REFERRED BY : DR. NARVEKAR ORDER NO: 5425980 DATE : 02/09/2004

EXAMINATION
ULTRASOUND OF PELVIS

** REPORT DETAILS **

Realtime sonography of the pelvis was performed.

The uterus measures 6.8 x 3.2 x 2.2 cm in size and is normal in shape and echotexture. No intrauterine or parauterine mass lesion seen. Endometrial thickness is 3mm (normal).

The right ovary measures 3.8 x 3.5 x 2.5 cm and
the left ovary measures 3.3 x 3.3 x 2.1 cm in size.
Both ovaries are bulky with multiple small follicles arranged peripherally.

The urinary bladder distends well and is normal in shape and contour. The bladder wall is normal in thickness.

There is no evidence of free fluid in the pelvis.

CONCLUSION :
1) FINDINGS SUGGESTIVE OF POLYCYSTIC OVARIAN DISEASE.
2) NO OTHER SIGNIFICANT ABNORMALITY IS SEEN ON THIS STUDY.

DR. R SUKTHANKAR - M.D.
CONSULTANT - RADIOLOGIST

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DEPARTMENT OF IMAGING

NAME [redacted] AGE : 17YEARS SEX : FEMALE
HH NO. : 658912 LOCATION : OPD ADM NO : - EXAM NO. : US 70236
REFERRED BY : DR NARVEKAR ORDER NO: 7092850 DATE : 27/10/2005

EXAMINATION
ULTRASOUND OF PELVIS

** REPORT DETAILS **

Realtime sonography of the pelvis was performed.

The uterus measures 9.0 x 3.9 x 2.6 cms and is normal in shape and echotexture. No intrauterine or parauterine mass lesion seen. Endometrial thickness is 6 mm.

The right ovary measures 3.2 x 2.6 x 2.3 cms and is normal in shape and echotexture. The left ovary measures 3.3 x 3.2 x 1.7 cms in size and shows a dominant follicle measuring 2.4 x 1.3 cm.

The urinary bladder distends well and is normal in shape and contour. The bladder wall is normal in thickness.

Minimal free fluid in Pouch of Douglas.

CONCLUSION :
- MINIMAL FREE FLUID IN POUCH OF DOUGLAS.
- NO OTHER SIGNIFICANT ABNORMALITY IS SEEN ON THIS STUDY.

DR. NIRAD MEHTA - M.D.
CONSULTANT - RADIOLOGIST
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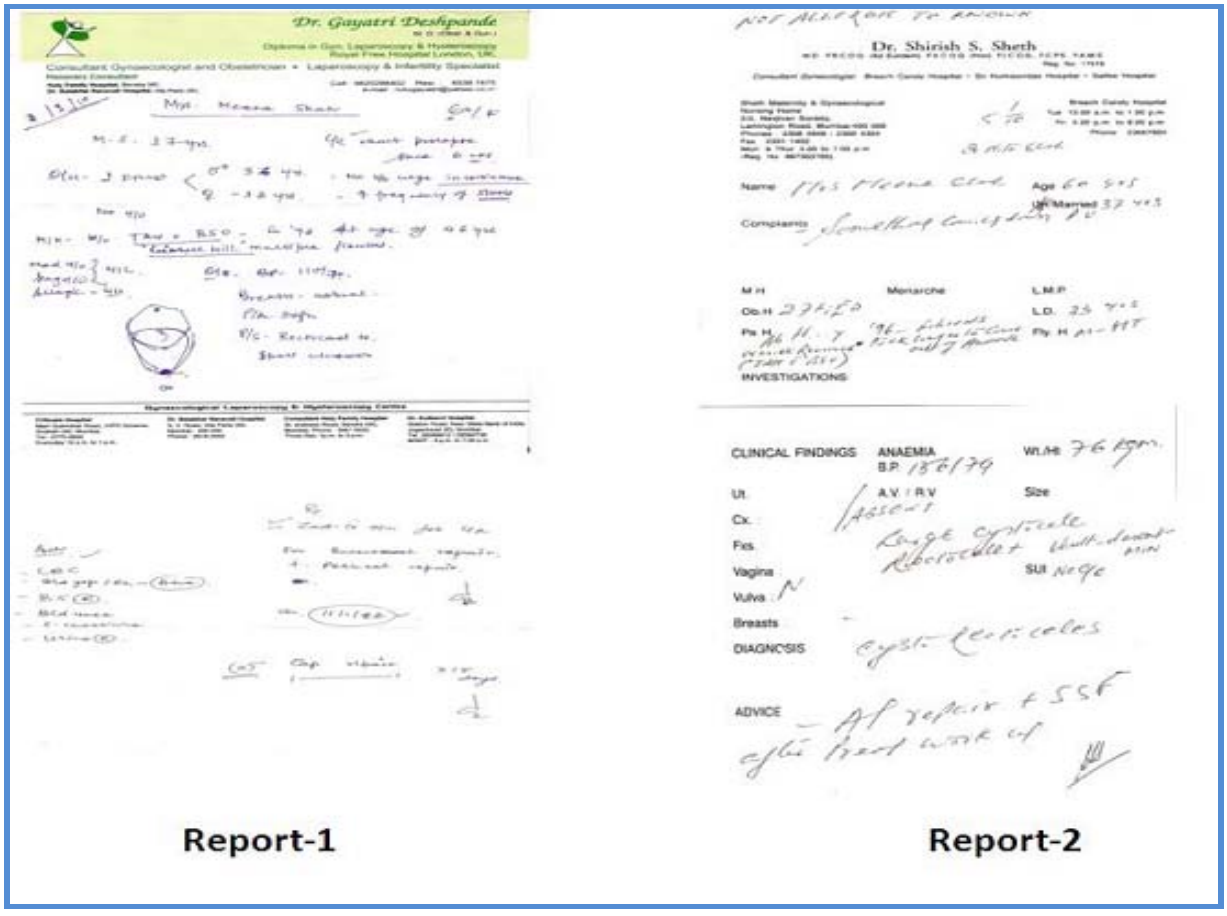
Figure 7: Reports of gynecologists



Dr. Gayatri Deshpande

Consultant Gynaecologist and Obstetrician • Laparoscopy & Infertility Specialist

Report-1

Dr. Shirish S. Sheth

CLINICAL FINDINGS ANAEMIA
B.P.
INVESTIGATIONS
DIAGNOSIS
ADVICE

Report-2

Applications in human body

Repair to ovaries

One sixteen year old girl was suffering from polycystic ovarian disease (Report of sonography test at Figure 6). The disease was in much advanced stage and resulted in complete stoppage of her menstruation cycle. In order to activate the relevant stem cell genes, 8/10 drops of medicated water containing Oophorinum 30+Aurum Iodide 30 in 10/15 ml of plain water were administered twice a day, continuously for six months. She got her period on sixth day from start of treatment. Subsequent period took two months to appear. Her menstruation cycle became normal after four months. At the end of sixth month, the treatment was withdrawn. Sonography test was repeated after one year from first one (Figure 6). It clearly indicates disappearance of cysts on ovaries and normalization of ovary sizes. After discontinuous of treatment there has not been any problem with her menstruation cycle. Her physical discomfort and mental stress which were present before start of treatment, disappeared completely by the end of it. This resulted in overall remarkable improvement in her physical and mental health. She did not take any other type of medical treatment during this period.

Repair to vault decent

One sixty year old lady had large cystocele and mild rectocele which caused vault prolapse (decent). This was causing her physical and mental discomfort. Consultation sheets from two gynecologists are reproduced at Figure7. Both gynecologists advised surgical repair for correcting the decent. She was given 8/10 drops of medicated water containing Sepia 200 + Lappa Articum 30 + Stannum 30 in 10/15 ml of plain water twice a day for one month. She reported marked improvement from sixth day onwards. By the end of treatment her vault was restored to its original position, indicating cure of cystocele and rectocele. She did not receive any other medical treatment during the period. It is evident that the said repair was caused by activation of adult stem cells by the drugs.

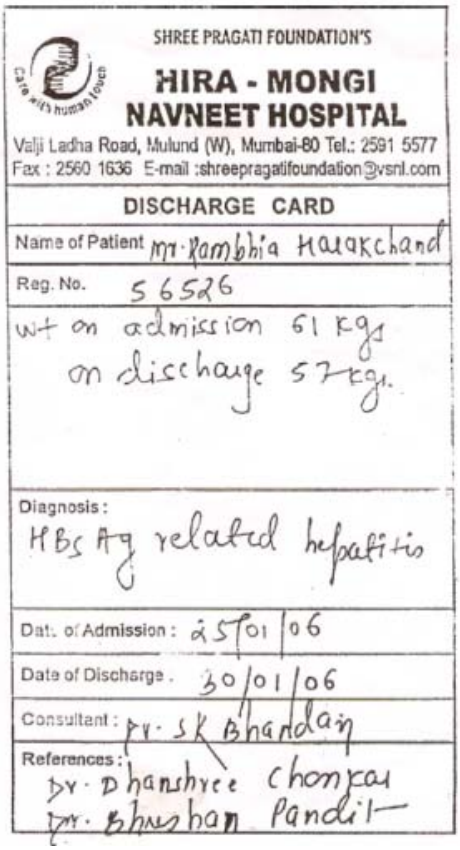
Repair to vocal cord

Mr. Pravin R. Rambhia, aged 58 years, (in 2006), had developed a big nodule on vocal cord causing complete loss of speech and great discomfort. To repair vocal cord, and to restore normal speech, he was advised immediate surgery (for removal of nodule). He was given 8/10 drops of medicated water containing Thuja 1M+Spongia 200 + Phytoleca 200 in 10/15 ml of plain water once a day for three months. From sixth day, he reported reduction in discomfort and slight audibility in speech. By the end of treatment, he became completely normal. He was totally comfortable with normal speech. He did not receive any other medical treatment during the period. Till date his speech is normal and there is no sign of any discomfort. It is obvious that this knife-less surgery is the result of activation of adult stem cell.

Repair/cure of HBSAG related hepatitis of HIV infected patient

Late Mr. Harakhchand Rambhia, aged about 40 years, (in 2006), was HIV positive and suffering from HBSAG related hepatitis (Figure 8). He was very uncomfortable with pain and swelling in the region of liver and unable to sit on floor or bend forward/backward. He was given 8/10 drops of medicated water, containing Thuja 1M+Lycopodium 200+Chelidonium 30+Carduus Mar Q+ Chionanthus Q+Phosphorus 30, in 10/15 ml of water twice a day for one month. He noticed improvement within a week and proceeded to his native village. He became normal by the end of treatment in one month, with disappearance of discomfort, pain and swelling. He regained his original weight. However, after three years he died there (at his native village) from some other sudden illness.

Figure 8: Discharge slip of HBSAG related hepatitis patient


SHREE PRAGATI FOUNDATION'S

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Valji Ladha Road, Mulund (W), Mumbai-80 Tel.: 2591 5577
Fax : 2560 1636 E-mail :shreepragatifoundation@vsnl.com

DISCHARGE CARD

Name of Patient Mr. Rambhia Harakchand

Reg. No. 56526

wt on admission 61 Kgs
on discharge 57 Kgs.

Diagnosis : HBs Ag related hepatitis

Date of Admission : 25/01/06

Date of Discharge : 30/01/06

Consultant : Dr. SK Bhandari

References : Dr. Dhanshree Chonkar
Dr. Bhushan Pandit

CONCLUSION

From the present study, it can be concluded that, it is possible to activate stem cell genes to trigger differentiations into specialist cell types, in order to repair damaged tissues of body, by the use of appropriate homoeopathic drugs. This technology can be a better option to physical transplantation in some of the cases.

REFERENCES

1. M Rajesh, A S William Arputha Sunder, N Narayanan and H Nelliah, *Stem Cells and its Clinical Applications – an Overview*, International Journal of Pharma and Bio Sciences, 2010, V1(1)
2. Bhalla, Singh, and Prem L. Bhalla. "*Plant Stem Cells Carve Their Own Niche*." Trends in Plant Science (2006).
3. SE Clark, MP Running and EM Meyerowitz, *CLAVATA1, a regulator of meristem and flower development in Arabidopsis,* Development 119 (1993), pp. 397–418.
4. P Laufs, O Grandjean, C Jonak, K Kieu and J Traas, *Cellular parameters of the shoot apical meristem in Arabidopsis,* Plant Cell 10 (1998), pp. 1375–1390.
5. Gangar H U, *Management of Genetic Activity through Homoeopathy*, International Journal of Pharma and Bio Sciences, 2010, V1(2)
6. Gangar H U and Sudha Tiwari, Homoeopathy: *A Superior Substitute of Genetic Engineering for Cotton Cultivation,* Bhartiya Vaigyanik evam Audyogik Anusandhan Patrika, 2004, 1, 80-83. (CSIR Publication).

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Dr. Gangar is a graduate in Electrical as well as Electronics and Telecommunication Engineering. He is Doctorate in Mechanical Engineering from University of Mumbai and has 42 years of experience in Engineering and Research. He has designed and installed plants for production of bio gas, paper, mushroom and compost from cellulosic wastes in agro-industries. He has initiated research on 'effects of homeopathic drugs on plants'.