



## Maratha Mandal's

Nathajirao G Halgekar Institute of Dental Sciences & Research Centre,  
R S No. 47A/2, Near KSRP Ground, Bauxite Road, Belagavi – 590 010  
Karnataka, India

Phone: 0831-2477682 Fax: 0831-2479323

Email: mmnghids@gmail.com Website: www.mmdc.edu.in

### Best Practice no 1

**Title of the practice-** Developing herbal medicines to use for prevention and treatment for Oral diseases.

#### **Objectives-**

1. To evaluate the role of herbal products in prevention and treatment of oral biofilm related diseases.
2. To prepare herbal formulations both in topical and systemic form for sustenance release.
3. To prepare herbal formulations which are economical. (cost effective).
4. To prepare safe herbal products which do not have any local or systemic adverse effects.
5. To apply for patenting of these herbal products.
6. To have multiple industrial collaborations to help commercialize the herbal products.

#### **The Context-**

The trend of current medications for prevention and treatment of oral diseases related to biofilm are derived from chemicals and have some observable local and systemic adverse effects. They are most of the times symptomatic and are heavily prized. Economically challenged patients in our country will not be able to afford these medications. The clinical trials to approve these medications are usually carried out in Western countries and hence their efficacy can not be totally relied upon for Indian population.

The above contextual issues encouraged us to establish a herbal garden within our campus which made it convenient for us to procure active ingredients from the herbal plants.

The establishment of state of the art Central Research laboratory at our Institute also encouraged us to get involved in various In-vitro and In-vivo studies wherein the efficacy of the herbal ingredients are evaluated. Preparation of various sustainable release topical medications especially in nano-formulations attracted different research grants in the field of oral health research.

  
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### The Procedure-

- A detailed literature search is carried out to study the properties of various parts of herbal plant. (seeds, leaves, branches, roots...etc)
- A hypothesis is derived to evaluate the efficacy of herbal plant for a particular oral disease.
- An In-vitro study is carried out to evaluate the biochemical properties of the plant derivative.
- Toxicity studies are carried out.
- Various formulations of the plant derivatives are prepared focusing more on sustainable release and nano-formulations.
- The formulations are used among experimental animals before conducting a clinical trial among human participants.
- Randomized Control Trials are carried out after safety evaluation and animal experimentation.
- The outcome of RCT's are used to apply for 'Patent' and further commercialization of the product.

### Challenges-

- The research projects mentioned above need elaborate procedures and a continuous back up of finances in the form of 'research funding' which is always a challenge to procure.
- It is quite challenging to motivate patients to enroll into these clinical trials.
- It is equally challenging to apply for patent and get it approved.

### Evidence of success-

The Institute has received good amount of research funding for carrying out the research projects which involve the herbal products from various Government and private universities and associations.

The process of patenting these products so as to make them available for commercial use is under way.

  
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Following is the list of completed research projects which evaluated the efficacy of herbal medicines.

Sl No	Title of the study	Name of the PI	Year of completion of the study	Herb used	Activity checked (anticancer, antioxidant, anti-inflammatory)
1	In vitro evaluation of cytotoxicity of Embilica officinalis on cultured human pulp fibroblasts.	Dr Aditi M Bulbule	2016	Embilica officinalis	cytotoxicity
2	Pharamceutical analytical study of kamsya bhasma and its anticancerous effect on cell line studies	Dr Aniket Vaidya	2016	kamsya bhasma	Anti cancer
3	Cytotoxic activity of endophytes isolated from Allamanda blanchetii. DC	Harsha D Pednekar	2018	Allamanda blanchetii	Anti cancer
4	Effect of curcumin nanoparticles on inflamed and healthy granulation tissue stem cells – A comparative invitro study	Dr P Hameeda Bee	2019	Curcumin	MSCs survival
5	An invitro evaluation of cytotoxicity of curcumin against human PDL fibroblasts	Dr Praveen Mandroli	2019	Curcumin	MSCs survival
6	Effect of Actinidia Deliciosa (Kiwi) extract on gingival fibroblasts and angiogenesis – An invitro study.	Dr Sartaz Rehman	2019	Actinidia Deliciosa (Kiwi)	cytotoxicity
7	Effect of curcumin on growth, biofilm formation and virulence factor gene expression of Porphyromonas gingivalis	Vijay M. K umbar	2019	Curcumin	Anti bacterial and antibiofilm activity
8	Effect of Resveratrol on biofilm formation and virulence factor gene expression of Porphyromonas gingivalis in periodontal disease	Manohar S Kugaji	2019	Resveratrol	Anti bacterial and antibiofilm activity

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9	A comparative evaluation of the proliferatory activity between endoglin & nanocurcumin on the human PDL fibroblasts: An invitro study	Dr Shivakumar Hiremath	2020	nanocurcumin	proliferatory activity
10	Evaluation of viability of PDL fibroblasts after storing in different media – Ice apple, Amniotic fluid and propolis	Dr Samhita Bijlani	2020	Ice apple, Amniotic fluid and propolis	cytotoxicity
11	Effect of curcumin on growth, biofilm formation on oral pathogens	Vijay M. K umbar	2020	Curcumin	Anti bacterial and antibiofilm activity
12	Comparison of Effects of Curcumin and Nano-curcumin on the Survival of Human-Derived Mesenchymal Stem Cells: An Experimental Study	Pinjari Hameeda	2020	curcumin	MSCs survival
13	Evaluation of cytotoxicity of ozonated olive oil mixed with denture adhesive, olive oil mixed with denture adhesive, clotrimazole mixed with denture adhesive and denture adhesive against gingival fibroblast cell line	Dr Pranit Bora	2021	olive oil	cytotoxicity
14	Evaluating and comparing antifungal efficacy of aloe vera and tulsi incorporated in denture soft liner: An invitro study	Dr Veena Pattanashetti	2021	aloe vera and tulsi	antifungal
15	An invitro evaluation of antimicrobial activity of ethanolic extract of cuminium cyminium in comparison to calcium hydroxide as intracanal medicament on common bacteria of endodontic infections.	Dr. Vinuta Bhandi	2021	cuminium cyminium	antimicrobial

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16	Effect of 1% Myristica Fragrans on human gingival fibroblasts to evaluate cell proliferation, viability and cytotoxicity – An invitro study	Dr Deepthi M	2021	Myristica Fragrans	cytotoxicity
17	Targeting Cancer Cells in Head and Neck Squamous Cell Carcinoma (HNSCC) by Curcumin as Potential Nanomedicine- An In-vitro Study	Vijay M. K umbar	2021	Curcumin	Anti – CSC activity
18	In-vitro antioxidant and anticancer activity of ethanol tulsi extract on human oral cancer cell lines	Dr Renuka Ammanagi	2021	Tulsi	anticancer, antioxidant
19	In-vitro antioxidant and anticancer activity of ethanol clove extract on human oral cancer cell lines	Dr Sheetal Sanikop	2021	Clove	anticancer, antioxidant
20	Invitro evaluation of the influence of Andrographis Paniculata on dental pulp cells.	Dr Annie Swathisha	2022	Andrograp his Paniculata	MSCs survival

  
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### Photographs of Herbal Garden



  
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### Best Practice no 2

**Title of the Practice-** Free Mid-day meals to patients visiting our Dental Institute (Annabhagya yojana).

#### **Objectives**

- To provide hygienic, healthy and tasty mid-day meals to economically challenged patients visiting our Institute for Dental treatment.
- To reduce the cost of dental treatment where in a patient also spends some amount of money on meals.
- To inculcate the value of 'social responsibility' among staff and students.
- To motivate patients to avail the dental facilities without having to worry about their mid-day meals, who come from nearby villages.

#### **The Context.**

Patients visiting our Institute are usually economically challenged individuals who come from nearby villages. They spend money on travelling, on dental treatment and on mid-day meals. They also tend to miss their daily wages by coming to treatment on working days. Even nominal amount collected towards material charges is unaffordable for this group of patients. To reduce their total expenditure, our management initiated a program wherein 'Free mid-day meals' is provided to all patients and accompanying persons visiting the Institute. This will give patients a cost effective choice to have a healthy, hot, hygienic meal during their dental treatment. This program is called as 'Annabhagya Yojana'.

#### **The Procedure**

Procuring the grocery, preparing food, serving it hot, and cleaning the utensils is looked after by a dedicated team of the Institute. Every day, from 12.00 noon to 1.30 PM, the food is served in a cool shaded place.

Patients enjoy their meals seated in park benches in the garden with background music of chirping birds.

#### **Challenges**

- Motivating patients to utilize the facility was a challenge to begin with.
- Covid 19 pandemic has been a challenge for us to continue the practice.

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### Evidence of Success

Over the time, patient flow to college has increased which has helped students to get good amount of clinical material. The students also value the initiation which has helped building the value system of 'Social responsibility' among them.

The practice has enhanced the reputation of our Institute in the neighboring villages. The practice has turned out to be a boon for daily wage workers. It has also inculcated in our students a feeling of empathy and responsibility towards the patients by providing holistic care.



  
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