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## Research Highlights

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## Research Highlights

### Abstract

Summary of the studies has been highlighted from Sep till Nov 2022.

### Acknowledgments and Source of Funding

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## Research highlights

### RUTA GRAVEOLENS REDUCING CELL VIABILITY IN BREAST CANCER CELLS

**Title:** *In vitro* antitumor activity in breast cancer cells (SKBR3 and PMC42) of *Ruta graveolens* in homeopathic dilution.

**Authors:** Ana Catarina Viana Valle, Aloísio Cunha De Carvalho, Hilana Dos Santos Sena Brunel, Maria Tereza de Oliveira Rodrigues, Rosângela Vieira De Andrade.

**Journal:** Journal of integrated standardised homeopathy, DOI: 10.25259/JISH\_31\_2022

**Summary:** In the present study, the evaluation of *in vitro* effects of different dilutions of Ruta D35 for treating two breast cancer lines (SKBR3 and PMC42) has been done. Ruta D35 had significantly reduced cell viability in the SKBR3 line compared to the control of untreated cells. A significant difference was obtained from the concentration of 8 µl/ml ( $P = 0.0391^*$ ). The dose response effect was more evident in SKBR3 cells treated with higher Ruta D35 concentrations (50 µL/mL). Conversely, Ruta D35 significantly reduced cell viability in the PMC42 line at higher concentrations (20–50 µL/mL).

**Comments:** *Ruta graveolens* D35 had significantly reduced cell viability in the SKBR3 line compared to the control of untreated cells. Cellular damage was observed in the SKBR3 line, leading to a significant reduction in cell viability at low concentrations (8 µL/mL). In contrast, no significant reduction in cell viability was recorded in the PMC42 line when exposed to the same concentration. Ultradiluted *Ruta graveolens* have the antitumor capacity, but further tests are necessary to better understand the cytotoxic action and the potential of *Ruta graveolens* for treating breast tumour cells.

### AVENA SATIVA AND ECHINACEA ANGUSTIFOLIA FOR HAEMATOLOGICAL PARAMETERS OF MAGELLANIC PENGUINS DURING THE REPRODUCTIVE PERIOD

**Title:** Evaluation of the Effects of Administering Ultradiluted *Avena sativa* and *Echinacea angustifolia* on the Haematological Parameters of Magellanic penguins (*Spheniscus magellanicus*) during the Reproductive Period.

**Authors:** Franscinne Brait Narita, Melina Castilho de Souza Balbueno, Michele Legnaro Yang Kleber da Cunha Peixoto Jr, Ralph E.T. Vanstreels Cidéli de Paula Coelho

**Journal:** Homeopathy. DOI: 10.1055/s-0042-1751308

**Summary:** Penguins (N = 18), kept under human care in a zoological park setting, were evaluated during the reproductive period and were divided randomly into two groups: Verum group subjected to treatment with *Echinacea angustifolia* 6cH

and *Avena sativa* 6cH (N = 8; four breeding couples) and a placebo control group (N = 10; five breeding couples). The verum group was treated with *Echinacea angustifolia* 6cH and *Avena sativa* 6cH in sucrose globules administered orally in the fish that were fed to each penguin. The control group received globules (placebos) consisting of the same inert vehicle but without the homeopathic preparation. Two blood collections were performed: The first collection was done before the beginning of the reproductive period and the administration of the treatments, and the second collection was done after the second egg of each couple had been laid. Mean corpuscular volume (MCV), in the verum group, showed an increase ( $29.78 \pm 52.95$  fL) while the control group showed stability/reduction ( $-3.08 \pm 46.36$  fL) ( $P = 0.049$ ). Proportion of heterophils, in the verum group, showed a less marked increase ( $8.38 \pm 12.53\%$ ) than that of the control group ( $18.00 \pm 9.37\%$ ) ( $P = 0.010$ ). Lymphocyte concentration, in the verum group, showed less marked reduction ( $-4.39 \pm 2.21 \times 10^9$  cells/L) than that of the control group ( $-1.56 \pm 2.76 \times 10^9$  cells/L) ( $P = 0.001$ ). Proportion of lymphocytes, in the verum group, showed a less marked reduction ( $-6.75 \pm 10.35\%$ ) than that of the control group ( $-17.3 \pm 8.73\%$ ) ( $P = 0.002$ ).

**Comments:** Comparison of samples collected before and during the reproductive period showed that there were differences in the effects on MCV, heterophils and lymphocytes. Treatment with *Echinacea angustifolia* and *Avena sativa* resulted in the maintenance of lymphocyte levels in Magellanic penguins during the breeding period, thus aiding these birds' immunity.

### ROLE OF HOMOEOPATHY IN IRRITABLE BOWEL SYNDROME

**Title:** Efficacy of individualised homeopathic medicines in irritable bowel syndrome: A double-blind, randomised, placebo-controlled trial

**Authors:** Aakash Deep Das, Shubhamoy Ghosh, Chithra Palanisamy, Nilanjana Guha, Sanjukta Mandal, Shukdeb Maiti, Arunava Nath, Navin Kumar Singh, Munmun Koley, Subhranil Saha.

**Journal:** Explore. <https://doi.org/10.1016/j.explore.2022.10.004>

**Summary:** This study was a randomised, placebo-controlled trial which has highlighted the effect of individualised homeopathic medicines on patients suffering from inflammatory bowel syndrome. Sixty patients were taken, divided into two groups, 30 were prescribed individualised homeopathic medicines and 30 were prescribed placebo. The primary outcome measures were the IBS quality of

life (IBS-QOL) questionnaire and the secondary outcome measures were IBS severity scoring system (IBS-SSS) and EQ-5D-5L scores. All scales were measured at baseline and every month up to 3 months. Group differences in IBS-QOL total scores, IBS-SSS and EQ-5D-5L scores favoured homeopathic treatment against placebo overall and at all the time points (all  $P < 0.001$ ). *Pulsatilla nigricans* ( $n = 4$ , 6.7%) and *Thuja occidentalis* ( $n = 4$ , 6.7%) were the most frequently prescribed medicines.

**Comments:** Individualised homeopathic medicines act significantly in this study. The group receiving the homeopathic medicines showed better results than the placebo group.

### ALLIUM SATIVUM 6C IN CORRECTING DYSLIPIDAEMIA IN RAT MODELS

**Title:** Evaluation of hypolipidaemic activity of homeopathic drug *Allium sativum* 6C potency on different grades of dyslipidaemia in Wistar albino rat models

**Authors:** Thangarajeswari Mohana, Kalaiselvi Perianadavana, Debadatta Nayak

**Journal:** Phytomedicine Plus. <https://doi.org/10.1016/j.phyflu.2022.100354>

**Summary:** This study evaluated the hypolipidaemic and anti-inflammatory activities of *Allium sativum* 6C in mitigating dyslipidaemic changes in different types of dyslipidaemic rat models. Assessment of serum biochemical parameters, evaluation of liver cytokines and immunoblot analysis of inflammatory proteins were performed. Administration of a homeopathic preparation of *Allium sativum* 6C to different types of dyslipidaemic rat model showed that there is significant reduction in the levels of serum cholesterol and serum triglyceride, reduction in the activity of serum marker enzymes (AST, ALT, LDH and ALP) and reduction in the levels of liver inflammatory cytokines (TNF $\alpha$ , IL-6 and IL-1 $\beta$ ). Further, the expression of inflammatory proteins (CRP, P-selectin and E-selectin) downregulated in the liver of dyslipidaemic animals on administration of *Allium sativum* 6C. Among the various dyslipidaemic models, the efficacy of *Allium sativum* is more profound in the high cholesterol diet (HCD) and high-fat diet (HFD)-fed animal models. Analysing the gas chromatography–mass spectrometry (GC–MS) data of *A. sativum* 6C revealed that it contains active ingredients, namely undecane, 1-methylene 1H-Indene and oxazolam that might be responsible for the anti-inflammatory properties.

**Comments:** *Allium sativum* 6C was found effective in reduction of the levels of serum cholesterol triglyceride, marker enzymes, inflammatory proteins and inflammatory cytokines. This medicine can be used for therapeutic purposes in correcting metabolic dysfunction associated with the current lifestyle.

### ROLE OF HOMOEOPATHY IN TREATMENT OF MODERATE AND SEVERE CASES OF COVID-19

**Title:** Homeopathy as an Adjuvant to Standard Care in Moderate and Severe Cases of COVID-19: A Single-Blind, Randomized, Placebo-Controlled Study

**Authors:** Harleen Kaur, Subhash Kaushik, Gurpreet Singh, Arvind Kumar, Shweta Singh, Tania Chatterjee, Syed Ali, Khushbu Gautam, Maneet Parewa, Naval Kumar Verm, Sushma Bhatnagar, Suraj Pal Singh, Varun Shekhar, Anil Khurana

**Journal:** Homeopathy. DOI: 10.1055/s-0042-1755365

**Summary:** A total of 150 patients were recruited and then randomly divided into two groups to receive either individualized homeopathic medicines or placebos, in addition to the standard treatment of COVID-19. The primary outcome was time taken to achieve RT-PCR-confirmed virus clearance for COVID-19. Secondary outcomes were changes in the Clinical Ordinal Outcomes Scale (COOS) of the World Health Organization, the patient-reported Measure Yourself Medical Outcome Profile 2 (MYMOP2) scale, and several biochemical parameters. In total, 72 participants of the add-on homeopathy (AoH) group showed conversion of RT-PCR status to negative, in an average time of  $7.53 \pm 4.76$  days (mean  $\pm$  SD), as compared with  $11.65 \pm 9.54$  days in the add-on placebo (AoP) group ( $p = 0.001$ ). The mean COOS score decreased from  $4.26 \pm 0.44$  to  $3.64 \pm 1.50$  and from  $4.3 \pm 0.46$  to  $4.07 \pm 1.8$  in the AoH and AoP groups respectively ( $p = 0.130$ ). The mortality rate for the AoH group was 9.7% compared with 17.3% in the AoP group. The MYMOP2 scores between the two groups differed significantly ( $p = 0.001$ ), in favor of AoH. Inter-group differences in the pre- and post- mean values of C-reactive protein, fibrinogen, total leukocyte count, platelet count and alkaline phosphatase were each found to be statistically significant ( $p < 0.05$ ), favoring AoH; six other biochemical parameters showed no statistically significant differences.

**Comments:** The study suggests homeopathy may be an effective adjunct to standard care for treating moderate and severe COVID-19 patients. More rigorous, including double-blinded, studies should be performed to confirm or refute these initial findings.

### ARSENICUM ALBUM 30 C FOR COVID-19-RETROSPECTIVE ANALYSIS FROM MASS-LEVEL DATA

**Title:** Homeopathic Medicine *Arsenicum album* 30 C for COVID-19 in 2020: A Retrospective Analysis from Mass-level Data.

**Authors:** Anupriya Chaudhary, Debadatta Nayak, Swati Pandey, Resmy R, Anil Khurana, Covid- Study Group

**Journal:** Alternative Therapies in Health and Medicine. DOI: <http://alternative-therapies.com/oa/index.html?fid=7132>

**Summary:** Data from 50 colleges from February to August 2020 showed that 10.6 million people in 13 states of India received prophylactic medicine during the study period.

The data of 584,980 individuals who met the study criteria were included in the retrospective analysis. The incidence of COVID-19 in the population cohort was 13.58/10,000 person-weeks (95% CI, 13.04–14.14), which remained near-constant over time despite the increasing disease burden in the country (12.87–14.52/10,000 person-weeks). Comparable incidence rates (IRs) were observed in the study population during the periods of lockdown (April–May 2020; IR = 13.41/10,000 person-weeks; 95% CI, 12.73–14.1) and unlock (June–August 2020; IR = 13.84/10,000 person-weeks; 95% CI, 12.9–14.84).

### OPEN-LABEL STUDY OF *ARSENICUM ALBUM* 30 C IN THE PREVENTION OF COVID-19 IN INDIVIDUALS RESIDING IN CONTAINMENT AREAS

**Title:** Efficacy of *Arsenicum album* 30C in the Prevention of COVID-19 in Individuals Residing in Containment areas – A Prospective, Multicentre, Cluster-Randomised, Parallel-arm, Community-based, Open-label Study.

**Authors:** Debadatta Nayak, Karthikeyan Devarajan, Partha Pratim Pal, Hima Bindu Ponnamp, Nidhi Jain, Vipul Shastri, Ramesh Bawaskar, Raveendar Chinta, Anil Khurana

**Journal:** Complement Med Res. DOI: 10.1159/000526897

**Summary:** This study was a prospective, multicentre, cluster-randomised, parallel-arm, community-based, open-label study involving apparently healthy individuals residing in containment areas of seven cities of India. This study was undertaken to evaluate the protective efficacy and safety of the *Arsenicum album* 30C. The analysis included 32,186 individuals residing in 42 clusters (containment areas). A total of 22,693 individuals of 30 clusters received *Arsenicum album* 30C and 9493 individuals of 12 clusters were observed in the control group. The protective effect of the *Arsenicum album* 30C against laboratory-confirmed COVID-19 was 68.22% (95% confidence interval [CI]: 49.64–80; 32 cases/22,693 [4.83/10,000 person-weeks] in the *Arsenicum album* 30C group vs. 42 cases/9493 [14.93/10,000 person-weeks] in the control group). *Arsenicum album* 30C was associated with a decrease in the incidence and provided protection against COVID-19 as compared to the non-treatment group.

### ROLE OF *ARSENICUM ALBUM* 30C IN COVID-19 CASES

**Title:** Effectiveness of *Arsenicum album* 30C in the Prevention of COVID-19 in Individuals Residing in Containment Zones of Delhi – A Prospective, Community-based, Parallel Cohort Study

**Authors:** Debadatta Nayak, Karanpreet Nahar, Rupali Bhalerao, Lovepreet Kaur, Tabassum Parveen Ruchika Bhalla, James Michael, Swati Sharma, Parul Singh, Afsana Jainab, Hanuman Ram, Abhishek Chaudhuri, Ummesalma Parvin, Nidhi Jain, Anil Khurana

**Journal:** Homoeopathy. DOI: 10.1055/s-0042-1745755.

**Summary:** This was a prospective parallel cluster cohort study conducted between April 2020 and August 2020 to evaluate the effectiveness of *Arsenicum album* 30C on the incidence of COVID-19 in individuals in containment areas of Delhi. Participants were enrolled in two cohorts: The homoeopathy intervention (HI) cohort and the non-intervention (NI) cohort. A population of 10,392 was screened, and 10,180 (HI cohort,  $n = 6,590$ ; NI cohort,  $n = 3,590$ ) participants were enrolled from the community, where local transmission had been reported and declared a containment zone by the local health authority. A total of 212 individuals were excluded, as they did not meet the inclusion criteria. The overall effectiveness of *Arsenicum album* 30C was 83.43% (95% [CI], 76.77–88.17): 45 cases/6590 (8.34/10,000 person-weeks) in *Arsenicum album* 30C group vs. 143 cases/3590 (45.01/10,000 person-weeks) in the NI cohort. The protective effect of *Arsenicum album* 30C against laboratory-confirmed COVID-19 was 74.40% (95% CI, 55.08–85.41): 18 cases/6590 (3.32/10,000 person-weeks) in *Arsenicum album* 30C group vs. 38 cases/3590 (11.85/10,000 person-weeks) in the NI cohort.

**Comments (For study no. 5, 6 and 7):** During the first phase of the pandemic where there were no known preventive modalities, *Arsenicum album* 30 was distributed as a mass prophylaxis. Data analysis identifies a high protection provided by the medicine. The homoeopathic genus epidemicus based on symptomatology can be used in initial phase of an epidemic till laboratory-based virological and immunological studies can identify more specific protective agents.

### EFFECTIVENESS OF HOMOEOPATHIC MEDICINES IN THE SECOND WAVE OF COVID-19

**Title:** Homoeopathic Medicines in the Second Wave of COVID-19: Prognostic Factor Research

**Authors:** Raj Kumar Manchanda, Anjali Miglani, Moumita Chakraborty, Amrit Kalsi, Baljeet Singh Meena, Prabhjeet Kaur, Beenu Saini, Amit Arora, Cheshta Nagrath, Jithesh Thavarayil Kanno, Ram Kumar Kudiaryasu, Rahul Vardaan, Smita Brahmachari, Yogesh Kumar, B. Amitav, Pramod Konthembath, Ankit Gupta, Suresh Kumar Lolugu, Pawan Goel, Shelly Arora, Shirin Balan, Kavita Sharma, Anu Chawla, Malaya Kumar Ray, Vineetha Susan Jacob, Udesh Kumar, Vikas Kumar Verma, Rahul Kumar Singh, Abishes Saha, Manjula Ghuliani, Paramjeet Kaur, Shruti Gora, Meeta Gupta, Brender Sharma, Lex Rutten

**Journal:** Homoeopathy. DOI: 10.1055/s-0042-1748881

**Summary:** This was a retrospective, multicentred observational study performed from March 2021 to May 2021 on confirmed COVID-19 cases who were either in home isolation or at COVID Care Centres in Delhi, India. The data were collected from integrated COVID Care Centres where homoeopathic medicines were prescribed along with conventional treatment. Out of 769 confirmed COVID-19 cases reported, 514 cases were selected for



analysis, including 467 in home isolation. Of these, 70 patients took only homoeopathic treatment while 444 used conventional symptomatic treatment as well as homoeopathy. The most common complaints were cough, fever, myalgia, sore throat, loss of taste and/or smell and anxiety. Certain new symptoms for example, headache, dryness of mouth and conjunctivitis, were also seen. Thirty-nine medicines were prescribed, the most frequent being *Bryonia alba* (161 cases) followed by *Arsenicum album* (98 cases), *Pulsatilla nigricans* (51 cases), *Belladonna* (31 cases), *Gelsemium sempervirens* (27 cases), *Hepar sulphuris* (22 cases), phosphorus (17 cases), *Rhus toxicodendron* (14 cases) and *Mercurius solubilis* (14 cases).

**Comments:** Results of this study show that homoeopathy can offer support as an adjunct therapy, along with conventional drugs, in clinical management of the COVID-19 pandemic. It also confirms the prognostic factors of four medicines used in the authors’ previous study. Add-on use of homoeopathic medicines has also shown encouraging results in the second wave of COVID-19 in the integrated care facilities.

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