

adopted, for the dilutions 2c and 9c, an RT-PCR Array approach (SABioscience, Qiagen) containing 84 genes, including receptors and regulators of neuronal function. In this further investigation we observed a trend to down-regulation for DRD2, CHRN4B, CHRNG, PROKR2 and PHOX2A genes in 2c and BRS3, GRPR genes in 9c dilution. In particular the down-regulation of DRD2 and PROKR2, effective in the inhibition of Gabaergic neurotransmission, suggests a specific effect of *Gelsemium s.* in increasing the endogenous GABA activity. Overall, the genes modulated in this experimental model outline new working hypotheses on the anxiolytic and analgesic action of this plant. In conclusion this study provides evidence that *Gelsemium s.* exerts a prevalently inhibitory effect on a series of genes, in particular involved in G-protein coupled transduction systems, in olfactory transduction, in calcium signaling and in neurotransmission. Furthermore the whole genome expression analysis (microarray and real-time PCR), indicates that the “omics” molecular biology is a suitable approach to study the effects of highly diluted natural compounds.

In-vitro experiments to investigate the effects of homeopathic drugs for chronic aggressive periodontitis by lymphocyte migration activity

G Gassmann¹, C Raak², K Büchel¹, F Schaupp¹, A Friedmann¹ and T Ostermann^{2,*}

¹Department of Dental Medicine, Witten/Herdecke University, Witten, Germany

²Institute for Integrative Medicine, Witten/Herdecke University, Herdecke, Germany

*Corresponding author.

E-mail: thomas.ostermann@uni-wh.de (T. Ostermann)

Background: Several homeopathic drugs are applied in the treatment of periodontal inflammation. However less is known about the basic working principles of highly diluted remedies in such chronic inflammatory conditions. We therefore aimed at investigating the effects of homeopathic drugs in periodontal inflammation by observing lymphocyte migration activity.

Material and Methods: Lymphocytes from blood samples of three patients suffering on chronic aggressive periodontitis and three matched healthy volunteers were extracted and embedded in a collagen matrix migration assays together with highly diluted (D12 and C200) aqueous extract from *Mercurius solubilis*, *Silicea*, *Sulfur*, *Tuberculinum*, or placebo. Activity and speed of lymphocytes were observed in a 60 min time frame using flow cytometry. Statistical analysis was performed using univariate statistics and SiZer time series analysis.

Results: A significantly reduced migration activity and speed was observed in lymphocytes extracted from the patients suffering on chronic aggressive periodontitis compared to those of healthy volunteers (mean activity: 12.5% vs. 26.3%). While C-potencies did not reveal strong differences between placebo and substances some meaningful effects were observed in D-potencies compared with placebo: moderate but not significant inhibiting effects with regards to activity were observed in lymphocytes treated with *Silicea* extract (mean activity: 13.3% vs. 11.9% in patients' and 26.2% vs. 22.2% in healthy samples). The strongest and most specific effects were observed in Sulphur D12 which showed an activating effect in lymphocytes of patients (mean activity: 11,1% vs. 23,8%) but not in those of healthy volunteers (25,8% vs. 25,6%). SiZer analysis confirmed this effect to be significant.

Conclusion: Discussion about the basic working principles of highly diluted substances is still vital and leads to controversies in the scientific discussion. Although conclusions are limited due to low sample size, our pilot study was able to reproduce former results on lymphocyte migration activity and thus proves model validity. Results from our pilot study might encourage further investigations on the role of highly diluted Sulphur in the treatment of periodontitis.

Use of homeopathy for prophylaxis of urinary tract infections in patients with neurogenic bladder dysfunction

Jürgen Pannek^{1,*}, Martine Cachin Jus² and Mohinder Singh Jus²

¹Neuro-Urologie, Schweizer Paraplegiker-Zentrum, Nottwil, Switzerland

²SHI Homöopathie Praxis, Zug, Switzerland

*Corresponding author.

E-mail: juergen.pannek@paraplegie.ch (J. Pannek)

Background: Patients with neurogenic bladder dysfunction are prone to various urologic disorders which sometimes cannot be appropriately treated. Especially recurrent urinary tract infections (UTI) in patients with spinal cord injury are a frequent clinical problem. Often, conventional preventive measures are not successful. We present our initial results of collaboration between homeopaths and urologists in these patients.

Materials and Methods: after exclusion of morphologic abnormalities and initiation of a standard regime for prophylaxis, all patients with a neurogenic lower urinary tract dysfunction (NLUTD) due to spinal cord injury (SCI) with more than 3 symptomatic UTI/year were offered additional homeopathic care (classical homeopathy with an individualized approach). UTI symptoms were fever, incontinence, increased spasticity, decreased bladder capacity or pain/