Joint meeting of the GP-TCM Research Association

The TCM Chemistry Specialty Committee

and the TCM Pharmaceutical Analysis Specialty Committee of

the World Federation of Chinese Medicine Societies

12th - 15th July 2015, Mons, Belgium

"Traditional medicines: Science meets culture". Joint meeting GP-TCM RA / WFCMS. Mons 2015

has currently recruited 11participants and is anticipated to complete by October 2015.

O-55
DENSE CRANIAL ELECTROACUPUNCTURE STIMULATION FOR MDD: A PET/CT RANDOMIZED CONTROLLED STUDY

Hung Bun Hung
School of Chinese Medicine, University of Hong Kong

The purpose of this study was to determine the effectiveness of Dense Cranial Electroacupuncture Stimulation (DCEAS) as additional therapy and neuroimaging correlates in patients with major depressive disorder (MDD) using PET-CT. A single- blind, randomized, controlled trial was conducted in 25 MDD patients treated with antidepressants combined with sham or active DCEAS with 3 sessions per week for 6 weeks. Clinical outcomes were measured using the Hamilton Depression Rating Scale 17-Item (HAMD-17), Zung Self-Rating Depression Scale (SDS), Clinical Global Impression-Severity Scale CGI-S and Insomnia Severity Index (ISI). 18F-FDG PET/CT and fMRI brain scans were conducted at baseline and endpoint. A total of 23 subjects (12 in sham and 11 in DCEAS) were included in PET study with linear mix model analysis. There was a significant difference in favor of DCEAS on the slope in SDS ($P < 0.035$). While glucose hyperactivity in the cerebellum was normalized in both treatment groups, the reversion of the reduced glucose activity metabolism in the left prefrontal cortex was only observed in DCEAS-treated patients ($P < 0.001$ uncorrected). Additional treatment with DCEAS could more vigorously improve brain glucose metabolism in MDD (the study was supported by GRF: 786611).

Posters

P-56
STUDY ON THE TISSUE DISTRIBUTION OF COMPOUNDS AND METABOLITES OF THE MONGOLIAN MEDICINE DIGEDA-4 DECOCTION IN ACUTE LIVER INJURY INDUCED BY D-GalN

BAI Mei-rong, Bagen-na, BAO Ming-lan, Laxi-Namujila, Ji-Rimutu
College of Mongolian Medicine and Pharmacy, Inner Mongolia University For The Nationalities, Tongliao, China

The objective of this study was to study the distribution characteristics of Mongolian drug Digeda-4 decoction in rats with acute liver injury. The Mongolian drug Digeda-4 decoction was administered intragastric in rats with acute liver injury induced by D-GalN. The removal of the Liver, spleen, lung, kidney and heart , 10% tissue homogenate was prepared with physiological saline, remove the protein, the moving elements were analyzed by LC-MS and NMR of Liver, spleen, lung, kidney and heart, identified it structure. Three compounds were detected in liver, including 2 prototype components of swertiamarin and androsin, and a new metabolite; 7 compounds were detected in spleen tissue, including 4 prototype components and 3 new metabolites; 6 compounds were detected in kidney tissue, including 3 prototype components and 3 new metabolites; 2 compounds were detected in lung issue, all prototype components; no compounds were detected in heart tissue. Detected prototype components include swertiamarin, dandrosin, ß-rhamno-eniposide, picroside, and hexadecanoic acid.
The compounds from the Mongolian drug Digeda-4 decoction are widely distributed in the liver, spleen and kidney, to a lesser extent in the lung but not in heart. The results indicate that the drug not only has curative effect on liver disease but may also have therapeutic effects on spleen and kidney diseases, with potential interest for further development.

P-57
CONTENT DETERMINATION OF HYPERIN IN RHODODENDRON BY HPLC

Bai Yuxia[1], Wang Meili[2]
1,2 College of traditional mongolian medicine, Inner mongolian university for the nationalities, Tongliao, China

As one of the cultural heritages of the nation, Mongolian Medicine was formed and developed in the long-term medical practice of the Mongolian people, and has become a major constituent part in the Traditional Chinese Medicine. In the past, Mongolian medicine made great contributions to the living and breeding of generations of the Mongolian people and had a positive impact on the formation of the civilization in the northern China. The Mongolian medicine, Rhododendron, is the dried flower of *Rhododendron micranthum*. It has functions of eliminating phlegm and stopping cough, revitalizing and nourishing. In order to control the inherent quality of RSP and to ensure its clinical efficacy, we establish a HPLC method for content determination of hyperin in Rhododendron. Using Diamonsil C_{18} (250mm×4.6mm, 5μm), the mobile phase was acetonitrile-0.5% phosphoric acid solution (15:85), with the flow rate of 1.0 ml/min, column temperature of 30°C and the detection wave at 360 nm, the sample size was 10 μL. A good linear relationship was obtained between the peak areas and the concentrations of hyperin in the range from 0.0575 to 0.408 μg ($r=0.9997$), the mean recovery rate was 98.41% ($n=6$), RSD=1.54%. This method is convenient, rapid, accurate, and can bring about good recovery; it can be used for content determination of hyperin in Rhododendron.

P-58
IN VITRO AND IN VIVO EVALUATION OF THE SAFETY OF SOME BENINESE PLANTS USED IN TRADITIONAL MEDICINE

C. Beaufay, J. Bero, J. Quetin-Leclercq
Université catholique de Louvain, Avenue E. Mounier B1.72.03, B-1200, Belgium

About 80% of population in developing countries use traditional remedies in their usual health care and plants used in traditional medicine are an interesting alternative to expensive and hardly available modern medicines, mainly in rural areas. Moreover, they are a promising source of new drugs structurally innovative. Therefore it is important to investigate their biological properties and we focused on 5 beninese plants: *Byrsocarpus coccineus* Schumach. & Thonn (Connaraceae), *Carpolobia lutea* G. Don (Polygalaceae), *Holarrhena floribunda* T. Durand & Schinz (Apocynaceae), *Keetia leucantha* (K. Krause) Bridson and *Keetia venosa* (Oliv.) Bridson (Rubiaceae). In order to validate their safety, we evaluated toxicity of dichloromethane extracts and also aqueous decoctions being the major formulation traditionally used, in vitro on two cellular strains, WI38 and J774, and *in vivo* on female NMRI mice according to the highest tolerated dose model. All lipophilic extracts and aqueous decoctions showed a low cytotoxicity on both strains (IC50 >35 and 100 µg/ml respectively) and no toxic signs with a total cumulative dose of 800 mg/kg (i.p. and p.o. respectively). These results provide evidence of their safety in acute model and the different extracts will be investigated in vitro/ in vivo to validate their traditional uses, especially anti parasitic ones for most of them.

P-59

PHENOLIC PROFILE, ANTIBACTERIAL, NEUROPROTECTIVE AND CYTOTOXIC PROPERTIES OF THREE ALGERIAN MENTHA SPECIES

Brahmi Fatiha[1], Guendouze Naima[1], Madani Khodir[1], PhillipeN. Okusa[2], Martin Kiendrebeogo[3], Kamagaju Léocadie[2], Stévigny Caroline[2], Chibane Mohamed[4], Duez Pierre[2,5]

1 Laboratoire de Biomathématique, Biochimie, Biophysique et Scientométrie, Université de Bejaia, 06000 Bejaia, Algeria

2 Laboratoire de Pharmacognosie, Bromatologie et Nutrition Humaine, Université Libre de Bruxelles (ULB), Belgium

3 Laboratoire de Biochimie et Chimie Appliquées (LABIOCA), UFR/SVT, Université de Ouagadougou, 09 BP 848, Burkina Faso

4 Faculté des Sciences de la Nature et de la Vie et Sciences de la Terre, Université Akli Mohand Oulhadj, Bouira, 10000, Algeria;

5 Service de Chimie Thérapeutique et de Pharmacognosie, Faculté de Médecine et de Pharmacie, Université de Mons (UMONS), Belgium

This study was designed to evaluate the antibacterial (direct effect and reversal of antibiotics-resistance), neuroprotective (acetylcholinesterase and carboxylesterase inhibition) and cytotoxic (MTT assay on 2 human cancer cell lines) properties of three Mentha species [*M. pulegium* L. (MP), *M. rotundifolia* (L.) Huds (MR), and *M. spicata* L. (MS)] harvested in Bejaia (Algeria). The phenolic compounds were characterized by HPTLC and HPLC and quantified using colorimetric assays. Results and conclusions: The extracts of MP and MS showed inhibitory activity against *Staphylococcus aureus* C 100459 with MICs values of 0.5 and 1.0 mg/mL, respectively. An additive effect was found between MS extract and streptomycin, whereas indifference effects were observed for the other tested combinations. The MP extract showed high neuroprotective and cytotoxicity effects compared with those of MS and MR despite the fact that (i) the MS extract showed the highest total phenolics content (26.4 ± 1.2 mg GAE/g DM; n = 3); and (ii) the MR extract harbored the highest flavonoids content (3.8 ± 0.1 mg QE/g of DM; n = 3). Phenolic acids identified in analyzed species were rosmarinic, caffeic, ferulic, and chlorogenic acids; while detected flavonoids were rutin, apigenin, naringenin, kaempferol, and quercetin. The overall results indicate that the studied plant extracts might be potential sources for biological active compounds.

P-60

THE ROLE OF DIPYRIDAMOLE IN PREVENTING ANGIOGENESIS IMPAIRMENT BY HOMOCYSTEINE AND ADENOSINE: A MODEL FOR SCREENING HERBAL BIOACTIVES.

Antony Kam[1,2,3], Valentina Razmovski-Naumovski[1,2], Kelvin Chan[1,2,4]

1 Faculty of Pharmacy, the University of Sydney, Australia;

2 The National Institute for Complementary Medicine (NICM), School of Science and Health, University of Western Sydney, Australia;

3 School of Biological Science, Nanyang Technological University, Singapore;

4 School of Pharmacy & Biomolecular Sciences, Liverpool John Moores University, UK.

Herbal bioactives have been shown to influence the pathogenesis of homocysteine associated vascular complications. However, there are no simple cellular models to study their role in preventing angiogenesis impairment by homocysteine and adenosine. Using dipyridamole, an inhibitor for nucleoside transport, we examined its mechanism of action on impaired angiogenic processes caused by homocysteine and adenosine in EAhy926 endothelial cells. Our results showed that dipyridamole restored the extracellular adenosine and intracellular S-adenosylhomocysteine concentrations disrupted by the combination of homocysteine and adenosine. Dipyridamole restored the impaired proliferation, migration and formation of capillary-like tubes of EAhy926 cells caused by the combination of homocysteine and adenosine. Mechanism analysis revealed that dipyridamole induced the phosphorylation of MEK and ERK, and its effect on cell growth was attenuated by the MEK inhibitor, U0126. Dipyridamole protected against impaired angiogenesis caused by homocysteine and adenosine, at least in part, by activating the MEK/ERK signalling pathway, and this could be associated with its effects in suppressing intracellular S-adenosylhomocysteine accumulation. This present study suggests that this cellular model could be used to investigate the angiogenetic properties and other CVS synergic actions of combinational extracts and isolated components of herbal medicines for homocysteine-associated vascular complications.