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Gel trial formulation of *Tinospora cordifolia* (Willd.) Miers. stem ethanolic extract and evaluation of its anti-inflammatory, wound-healing and skin irritation activities

Bagon N, Edejer L, Hizon A, Ibañez E, Jao E, Joson E, Manicdo J and **Castillo A**
University of Santo Tomas, Philippines

Tinospora cordifolia (Menispermaceae), commonly known as "Makabuhay", is known for its immense application in the treatment of various diseases in the traditional ayurvedic literatures. This medicinal plant, which is found in most or in all islands of the Philippines has wide array of physiological roles, thereby signifying the versatility of the plant. However, there was no scientific evidence justifying the use of *T. cordifolia* as an anti-inflammatory and wound-healing gel formulation. Thus, this study was initiated to formulate, characterize and evaluate the effectiveness of crude plant extract incorporated in gel base, in concentrations of 5% (w/v) and 10% (w/v) as a wound healing and anti-inflammatory gel preparations. Seven gel formulations were prepared and the physical attributes were observed to identify one formulation with desirable characteristics. The viscosity, pH, spreadability, consistency, and homogeneity of the selected formulation were examined. Both gel concentrations were assessed using incision wound model in Sprague-Dawley rats and formalin-induced rat paw edema method, which showed significant increase in tensile strength ($p<0.05$) of the wound compared to Curiosin gel and decrease in mean paw size ($p<0.001$) of the rats compared to Voltaren as reference drugs, respectively. The 10% gel concentration has more enhanced wound healing and anti-inflammatory activity compared to the 5% gel concentration exhibited in both tests. In parallel, Scratch and Patch tests in albino rabbits were performed to determine primary skin irritation effect. Both 5% and 10% *T. cordifolia* gels exhibited negligible irritant property, thus, they can be used safely as topical preparation to treat wounds and inflammation.

nicoleeileenbagon@yahoo.com

Validation of the Physician-Pharmacist collaborative index for physicians in Malaysia

Pauline Siew Mei Lai
University of Malaya, Malaysia

The Physician–Pharmacist Collaborative Index (PPCI) for physicians was developed to assess the professional exchanges between doctors and pharmacists. However, it has not been validated in Malaysia. Therefore, the objective of our study was to determine the validity and reliability of the PPCI for physicians in Malaysia. This validation study was conducted from June-August 2014, at a tertiary hospital in Kuala Lumpur. Doctors were grouped as either a "collaborator" or a "non-collaborator". Collaborators were doctors who regularly worked with one particular clinical pharmacist in their ward, while non-collaborators were doctors who interacted with any random pharmacist who answered the general pharmacy telephone line whenever they required assistance on medication-related enquiries, as they did not have a clinical pharmacist in their ward. The PPCI for physicians was administered at baseline and 2 weeks later. A total of 116 doctors (18 collaborators and 98 noncollaborators) were recruited. Confirmatory factor analysis confirmed that the PPCI for physicians was a 3-factor model. The correlation of the mean domain scores ranged from 0.711-0.787. "Collaborators" had significantly higher scores compared to "non-collaborators" (81.4±10.1 vs. 69.3±12.1, $p<0.001$). The Cronbach alpha for the overall PPCI for physicians was 0.949, while the Cronbach alpha values for the individual domains ranged from 0.877-0.926. Kappa values at test–retest ranged from 0.553-0.752. The PPCI for physicians was a valid and reliable measure in determining doctors' views about collaborative working relationship with pharmacists in Malaysia.

Notes:

plai@ummc.edu.my