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Determination of the wound healing property of *Ficus elastica* (indian rubber tree) leaf extract in male sprague- dawley rats on circular excision and linear incision model

Yssa Armeena T. Agapito, Maria Aibel Canaco, Kristine Mari M. Cruz, Patricia Joyce C. de la Pasion, Dominique I. Dela Cruz, Helsa Abigail King, Diana Mae S. Tamayo and Andrea Q. Carigma
University of Santo Tomas, Philippines

Introduction: *Ficus elastica* has been known to exhibit antibacterial and anti-inflammatory properties that may aid in the wound healing process. Wounds are major concerns for patient and clinician alike because the incidence of severe complications is high and financial resources are limited. The basic objective of the present work was to assess the wound healing activity of the leaf extract of *Ficus elastica* formulated as 1%, 2%, and 4% ointment.

Experimental: Leaves of *Ficus elastica* were collected and extracted using percolation. Anesthesia using Ketamine (120 mg/kg) and midazolam intraperitoneally was done prior to incision and excision of wounds to the right dorsal side of 30 male sprague-dawley rats. Groups 1, 2 and 3 were treated with the leaf extract of Ficus elastica in 3 doses, 1%, 2%, and 4% ointment, respectively. The animals of group 4 were topically treated with mupirocin (Bactroban) as positive control while group 5 animals with white petrolatum as negative control. The parameters studied were wound closure, skin tensile strength, and collagen content. The percent wound contraction was based on the comparison of wound healing activity of various formulations.

Results and Discussion: One-way ANOVA and Kruskal Wallis revealed no significant difference between the doses of *Ficus elastica* ($p<0.5$) which means that the doses are not a factor on the plant's wound healing property. The leaf extract of *Ficus elastica* 2% and 4% have significant difference against negative control (white petrolatum) ($p<0.05$); and positive control (mupirocin) has a significant difference against negative control (white petrolatum) ($p<0.05$) based on wound tensile strength. There is no significant difference among all the groups ($p>0.5$) based on wound contraction on the 14th day. The formation of granulation, fibroblast, collagen deposition, epithelialisation and angiogenesis increased in the *Ficus elastica* leaf extract treated group and Positive control (mupirocin) compared to the negative control (white petrolatum). There was scar formation in negative control (white petrolatum). Positive control (mupirocin) had the the most well-defined stages of wound healing. The extracts were able to increase the breaking strength (incision model), decrease period of epithelialization and increase percentage wound contraction (excision model). *Ficus elastica* ointment did not cause adverse dermatological effects throughout the duration of the experiment.

Conclusion: *Ficus elastica* leaf extract exhibited wound healing property comparable to the positive control, mupirocin, based on the histopathology and the tensile strength determination. There was no dose-response relationship observed since there is no significant difference among the wound healing activity in each groups given the three doses of the leaf extract. Regardless of the dose, the leaf extract improved the tensile strength of the wound models. The effect of the extract on wound contraction was found to be inconclusive since there was no significant difference observed among all the dose groups. No signs of irritation and other adverse dermatological effects were noted upon administration of *Ficus elastica* ointment during the 14-day application on the test animals. Ficus elastica leaf extract can be used as a safe, economic and effective pro-healing agents for wound management, enhanced healing and as well as controlling infections.

Antidiabetic potential of *Momordica balsamina* L. fruit pulp and its extracts in streptozotocin induced diabetic wistar rats

Faujdar S[1], Kalia A. N[2], Paliwal S. K[1] and Gauttam V[2]
[1]Banasthali University, India
[2]I.S.F. College of Pharmacy, India

Momordica balsamina L. fruit pulp and its extracts were evaluated for antidiabetic potential. The study was carried out on whole fruit pulp powder (FPP), aqueous methanolic extract 90% (AME) and aqueous extract for 3 weeks on streptozotocin (STZ) induced diabetic wistar rats. The biochemical parameters studied were serum glucose level, lipid profile and liver glycogen content along with this body weight was also measured. The ME showed significant ($P<0.05$) serum glucose lowering effect, improvement in the complete lipid profile and check on the loss of body weight in comparison to control diabetic rats. The results were comparable with glibenclamide (GLB) 500 µg/kg, standard antidiabetic drug. Phytochemical screening of the AME revealed the presence of alkaloids, flavonoids and steroids. Our findings suggest, the FPP and AME have significant ($P<0.05$) antidiabetic potential and can act as an effective oral hypoglycemic drug in diabetes.