

Documents

Khattak, M.M.A.K.^a, Mohd-Shukri, N.A.^a, Mahmood, T.^b, Ahmed, M.^c, Najmul Hejaz Azmi, S.^d, Alam, M.^e, Nazira Sarian, M.^f, Ahmed, Q.U.^g

Antidiabetic activity evaluation of polyherbal formulation in type 2 diabetes mellitus patients
(2024) *Journal of King Saud University - Science*, 36 (1), art. no. 103010, .

DOI: 10.1016/j.jksus.2023.103010

^a Department of Nutrition Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Jalan Istana, Bandar Indera Mahkota 25200, Pahang Darul Makmur, Kuantan, Malaysia

^b Medical Out-Patient Department of Hospital, Tengku Ampuan Afzan, Pahang, Kuantan, Malaysia

^c Department of Zoology, College of Science, King Saud University, P. O. Box 2455, Riyadh, 11451, Saudi Arabia

^d Applied Sciences Department, College of Applied Sciences and Pharmacy, University of Technology and Applied Sciences-Muscat, P. O. Box 74, Al-Khuwair, Muscat, 133, Oman

^e Department of Safety Engineering, Dongguk University, 123, Dongdae-ro, Gyeongsangbuk-do, Gyeongju-si, 38066, South Korea

^f Institute of Systems Biology (INBIOSIS), Universiti Kebangsaan Malaysia, Selangor, Bangi, 43600, Malaysia

^g Drug Discovery and Synthetic Chemistry Research Group, Department of Pharmaceutical Chemistry, Kulliyyah of Pharmacy, International Islamic University Malaysia, Pahang Darul Makmur, Kuantan, 25200, Malaysia

Abstract

Objective: The main aim of this research was to evaluate the effect of mixed herbs on blood HbA1c, and the liver function tests in type 2 diabetes mellitus (T2DM) patients. **Methods:** This was a quasi-experimental design where no comparison was made with either placebo or control. We examined the effect of herbs namely, coriander leaves (*Coriandrum sativum*), bunching onion (*Allium fistulosum*), curry leaves (*Murraya koenigii*), and holy basil leave (*Ocimum tenuiflorum*) among T2DM patients. Fresh herbs were cleaned, freeze-dried, ground, mixed (25 % of each), encapsulated and fed at 4 g/day to T2DM patients for 90 days. Blood samples were collected on days 0, 31, 61, 91 and 121. The effect was assessed on the levels of HbA1c, creatinine, blood urea and liver enzymes i.e., alanine transaminase (ALT) or serum glutamic-pyruvic transaminase (SGPT), aspartate aminotransferase (AST) or serum glutamic-oxaloacetic transaminase (SGOT), alkaline phosphatase (ALP), among the patients. The data were statistically analysed, and the means were regarded as significant at 95 % CI. **Results:** Blood HbA1c concentration was highest on Days 0 and 31 and significantly ($p < 0.001$ and $p < 0.01$) reduced on Days 61, 91 and 121. The creatinine and urea concentrations were found to increase but not considerable with larger variation among the subjects. The ALT and AST concentrations were found higher ($p < 0.001$) on Day 60 but started to decline afterwards. The ALP levels were higher on the Days 0 and 31 but started declining from Day 61 onwards. **Conclusion:** The consumption of mixed herbs was found to be associated with an improvement of HbA1c level among T2DM patients without having any clinically significant change in blood urea, creatinine, and liver enzymes. © 2023 The Author(s)

Author Keywords

Blood urea; Creatinine; HbA1c; Liver enzymes; Mixed herbs

Funding details

RSPD2023R984

King Saud University/KSU

Funding details

The authors would like to thank the HTAA Director (Dato' Dr. Hjh. Marlia Bt. Hj. Mohammed Salleh) and Head of the Medical Department (Dato'Dr. Hj. Sapari B. Satwi) for their permission to conduct this clinical trial at the M-OPD, HTAA, Kuantan. The authors are grateful to the Researchers Supporting Project (RSPD2023R984), King Saud University, Riyadh, Saudi Arabia for the support. The authors would like to thank the patients who participated in this clinical trial generously and the clinic nurses for their assistance during the data collection.

Funding details

The authors are grateful to the Researchers Supporting Project (RSPD2023R984), King Saud University, Riyadh, Saudi Arabia for the support.

Correspondence Address

Ahmed Q.U.; Drug Discovery and Synthetic Chemistry Research Group, Pahang Darul Makmur, Malaysia; email: quahmed@iium.edu.my

Publisher: Elsevier B.V.

ISSN: 10183647

Language of Original Document: English

Abbreviated Source Title: J. King Saud Univ. Sci.
2-s2.0-85177231178

Document Type: Article
Publication Stage: Final
Source: Scopus

ELSEVIER

Copyright © 2023 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

 RELX Group™