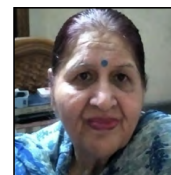


An update on the therapeutic potential of herbal preparations with regards to molecular and biochemical mechanisms in the management of diabetes mellitus: A systematic review



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Abstract

Evaluation of Diabetes mellitus (DM) kinds has demonstrated significant patterns. Of these the ones of maximum importance are inclusive of Oxidative stress, inflammation in addition to cellular demise. Till date drug treatments for DM are not optimal, hence need for innovative therapy has assumed great significance that is key for trying to discover the same. In the past decades medicinal plants have got thoroughly explored as well as their utilization is being escalatingly done in the form of alternative ones as natural products with the idea of curing the disease. We had reviewed various phytochemical therapies earlier that were inclusive of Dietary polyphenols, like resveratrol, curcumin, proteintyrosine phosphatase1B (PTP1B) inhibitors, plantterpenes (specificallymonoterpenes), flavonoids (quercetin, kaempherol),ursolic acid, besides epigenetic modes of certain plant agents. Our aim was to extensively evaluate the modes of biochemical actions in control of DM, to be able to utilize them clinically. Here we conducted a systematic review utilizing search engine PubMed, Google Scholar; web of science; etc utilizing the MeSH terms likeDM; Plant preparations from Nigella Sativa(NS); Berberine(Ber); curcumin(CUR); Moringa Olifera (MO); Portulaca Oleracea(PO); Punica Granatum(PG); typeIIIDMorAlzheimer'sdisease;AMPK;STAT3, PI3K/Akt; PTP1BINhibitors; IRS1; 2; NADPHOxidase; AGE; RAGE; NF κ B; proinflammatory cytokines; COVID19 from 2010 till date. Although main idea was to include human studies, we did include animal studies for validation of biochemical mode to help in their utilization with oral hypoglycemic agents in future if not alone. We found a total of 3600 articles out of which we selected 168 articles for this review. No meta-analysis was done. It was observed that most of these 6 major plants studied(NS, Ber, CUR, MO, PO, PG ,targeted 5'adenosine monophosphate (AMP)-activated protein kinase(AMPK) action that was followed by downstream actions of ACC, Akt as well as PI3K by which they ameliorated the disease. Thus with least toxicity, economical, easy access it is warranted to get over whatever bioavailability, problems we have faced with drugs like curcumin sothat they can get easily used singly or for reduction of oral antidiabetics.

Key Words: DM; herbal plants; NS, Ber; CUR; MO; AMPK; DM complications.

Biography

Kulvinder Kochar Kaur is the scientific director of DR Kulvinder Kaur Centre for Human Reproduction, Jalandhar, Punjab, India, where she manages the complicated cases of infertility. She graduated from LHMC Delhi in 1980 topping in medicine in all 3 medical colleges thereby getting the DR Devi Chand Gold medal from the late PM Smt. Indira Gandhi and also topped in all the MBBS subjects prior to that eg anatomy,pathology, biochem etc making her basics sound and later she managed the endocrine clinic in PGI Chandigarh during her MD days. Following that she reported the 40th world case hydrometrocolpos working in Saudi Arabia and has been working in the field of neuroendocrinology of obesity. GnRH control along with role of kisspeptins, prokineticins in human reproduction, AIDS and Cancer –during this period she managed to successfully treat the first case of non-gestational choriocarcinoma of uterine body in a young girl medically thereby preserving her fertility-the first case in world literature of its kind. Further she has over 300 publications mostly international in her name Kulvinder Kochar Kaur..

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