ISSN : 2320 4850

BI MONTHLY

Asian Journal of Pharmaceutical Research And Development

(An International Peer Reviewed Journal of Pharmaceutical Research and Development)

AJPRD

Volume - 01 Issue - 05 SEP-OCT 2013

website: www.ajprd.com
editor@ajprd.com

Asian Journal of Pharmaceutical Research and Development
(An International Peer-Reviewed Journal of Pharmaceutical Research and Development)
www.ajprd.com
ISSN 2320-4850

Research Article

THEROTICAL PERSPECTIVE OF BABA RAMDEVJI'S ARYUVEDIC FORMULATION AS SUBSTITUTE FOR (SOFT DRINKS)

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Received: 14 August 2013 ***Revised and Accepted: 2 Sept. 2013***

ABSTRACT

Shri Baba Ram Devji once announced in Dainik jagran Newspaper dated August 26, 2006 that he will replace soft drinks by an indigenious ayurvedic drink prepared by the leaves of TULSI, Karela, Kaddu and fruit Kheera possibly following the principle of Rasayana. We do not know what method has been followed in the preparation of such drinks. Our pharmacochemical insight indicated that this ayurvedic or natural product soft drink possesses diverse anticarcinogenic chemical structures. We rationalized the chemopreventive potential of this ayurvedic formulation.

Key words: *Ayurvedic, Soft drinks, Herbal leaves, Natural product, Ayurvedic formulation*

INTRODUCTION

The soft drinks or cola like drinks are the modern physiological maladies, which spoil the aesthetic character of human physiology. The contemporary soft drinks (Pepsi, Coca-Cola etc) have detrimental acidic pH(2-3.5) as serious health hazards [1-8] . Their acidic pH and toxicophoric chemical ingredients aggravate dehydration, tooth decay, osteoporosis, obesity, kidney damage, skin ageing, allergic reactions etc. We therefore assigned the following ideal qualifications for soft drinks.

- Metabolic energizer
- Youthful spirit inducer
- Immuno-tuner
- Ageing retarder

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A chemopreventive ayurvedic drink announced by Baba Ram Devji is based on the holistic philosophy of Ayurveda for eradicating disorders of tridosha [9-11] and maintaining normal human homeostasis. His holistic approach emphasizes the therapeutic worth of natural products. He intended to compose a natural product formulation of invigorating value, for health conscious human beings by following the traditional wisdom of Indian herbal heritage.

He selected leaves [12] of Tulsi (Ocimum sanctum), Kaddu (Cucurbita pepo), Karela (Momordica charantia) and fruit of Kheera (Cucumis sativus) for the formulation[13] as a substitute for cola like drinks.The phytochemical and biological rationalizations of this ayurvedic drink were studied. The leaves are very rich in Chlorophyll and Mg2+ cation. The chemopreventive rationale for the selection of leaves was justified on the basis of chlorophyll's bioactivities [14-18] and

functional role of magnesium in many bio-energetic reactions, which generate energy rich bonds.The phytochemicals of Tulsi,Kheera,Kaddu and karela are phytosterois , terpenoids, glycosides ,flavonoids, energy releasing vitamins ,essential fatty acids and micro-nutrients(Cu,Mn,Mg and Zn).

Theoretical Methodology:

The chemopreventive rationality for the phytochemical designing is based on the selection of bioactive phytochemicals. The pharmacochemical studies of the leaves of Tulsi, Kaddu, Karela and Kheera were made.

Tulsi Leaves:

The chemical constituents of fresh Tulsi leaves and stem are Apigenin, Cirsilneol, Cirisimartin, Isothymusin, Isothymonin and Eugenol [19-28].

Tulsi extracts have many bioactivities and superb therapeutic qualities. Modern scientific research provided evidences that Tulsi offers the versatile benefits for e.g.Holistic Health Promotion: Enhances general health and well-being, having positive overall effects on the body and mind.Stress Resilience: Increases the capacity to cope and adapt to changing and challenging environments, and reduces the negative physical and psychological effects of stress (adaptogenic).Energy and Performance Enhancement: Improves stamina and endurance Antioxidant : Free radical scavenging activity. neutralize toxic substances, therefore it is ageing retarder. Immunity Tune –Up: strengthens and modulates the immune system, reduces allergic immune reactions and nutritionally contains vitamins C and A and minerals calcium, zinc, manganese and iron, as phytoneutrients. Tulsi has a very high safety of margin with exceptionally low toxicity, providing general beneficial effects at doses without adverse reactions or other undesirable side effects. The fresh Tulsi leaves have beneficial effects on Xenobiotic metabolizing phase I and phase II enzymes, antioxidant enzymes, glutathione, lactate dehydrogenase and lipid peroxidation. The chemomodulation effect elevates antioxidant enzymes response by increasing the activities of catalase, superoxide dismutase and glutathione reductase and peroxide enhance free radical quenching ability and help in repair of biochemical lesions.The radioprotective activity is attributed to water soluable C-falvonoid glycosides are Orientin and Vicenin. They cause reduction of chromosomal aberration and exhibit strong inhibitory effect on Fenton reaction generated hydroxyl free radical activity. Ursolic acid and oleanoic acid have remarkable inhibitory activity against skin cancer .They have significant anti-tumor against activity human colon carcinoma cell line HCT 15. This effect is ascribed to inhibtion of tumor cell through cell cycle arrest.

Kaddu Leaves:

The nutritional data analysis of the leaves show their high nutritive value. which includes, vitamins A,C,B6,Niacin ,Thiamine,Riboflavin, Folates, Magnesium,Calcium, Copper, Phosporous, Manganese and low in Cholesterol. Secoisolariciresinol is chief chemical constituent, which also exist as the diglycoside (SDG).The metabolites of SDG have lipid peroxidation inhibitory and hydroxyl free radical scavenging activities. It is composed of 2,3-Bis (3-methoxy-4-hydroxylbenzy) butane1,4-diol(aglycone) and D-Glucose (sugar) which stimulates anti-platelet activation factor activity causing decreased release of reactive oxygen species from neutrophils. They also has anti-carcinogenic and anti-atherogenic actions due to antioxidant activities [29-32].

Karela Leaves:

The vivo study of leaf extract indicated that it has ability to increase resistance against viral infection and has an immunostimulant effect enhancing interferon production and natural killer cell activityThe immunostimulatory action endows antiviral, antimicrobial, antimalarail, antifungal, anti-inflammatory and anti-leukemic properties. In other words Karela leaves have remarkable chemotherapeutic promise.It has

chemopreventive activity against skin cancer. A protein Momordin has anti-cancerous activity against Hodgkin's Lymphoma in animals. A phytochemical is inhibitor of guanylate cyclase enzyme that is thought to be essential for growth of leukemia and cancer cells. The alpha and beta Momocharin and Cucurbitacin-B have anti-cancerous effects. A chemical analogs of these proteins have developed, patented and named "MAP-30". It inhibits prostrate tumor growth and has anti-HIV activity [33-37].

Kheera Fruit:

Kheera fruit is rich in phytosterols and triterpenoids. Amyrins, Cucurbitacins, Squalene, a-Linolenic acid, Spermidine, Propanol, Iso-Oreitin and choline type of compounds. They are well known chemical constituents.The anti-inflammatory antioxidant, immunostimulant and chemopreventive are their notable bioactivities. Alpha and Beta Amyrins are mixture of pentacyclic triterpenoids, having anti-inflammatory action. The phytosterois (Campsterol, B-Sitosterol, and Stigmasterol) have immunity enhancing action by stimulating human peripheral blood lymphocyte proliferation and enhancement of T-cell proliferation. Iso-orientin is C-glycosyl flavonoid having vasodilatory effect which is mediated by nitric oxide-cGMP pathway and inhibition of calcium channels release by deactivating voltage dependent calcium channels [38-42].

RESULT AND DISCUSSION

The most amazing fact of this study was that this ayurvedic formulation is very rich in anti-carcinogenic phytochemicals. Our pharmacochemical insight found that anti-tumor phytochemicals are chemopreventive in nature. Their actions are strongly supported by antioxidative, immunostimulating, radio-protective and anti-viral bio-actions. This diversity of bioactivities indirectly compliments the principle of rasayana therapy, which emphasizes the role of bio-vitalizers for rejuvenation of vitality. The anti-tumorogenic efficacy of this natural product formulation is testified by so many phytochemicals which are inhibitors of cancerous growth. It is quite interesting that Tulsi leaves have cytoprotective, antioxidant, anti-inflammatory and radioprotective bioactivities as confirmed by modern scientific validations.

The bioactive priciples of leaves represent traditional nutrients (vitamins / minerals) essential for the tonification. These nutraeuticals take care of nutritional deficiencies to maintain cell's optimal metabolic energy. The polyherbal chemicals have functional food status, because of their disease preventing and health promoting properties.

The ayurvedic significance of bioactive phytochemicals [43-44] can possibly match the ideal qualifications of soft drinks and principles of rasayana formulation. The antioxidant activity is ageing retarder, the immunomodulatory and anti-inflammmatory activities are immuno-tuner, energy-releasing vitamins are metabolic energizer and finally chemopreventive, adaptogenic, energy & performance enhancement comply with youthful spirit inducer.The chemopreventive substitute for soft drinks should have non-toxic preservative to maintain the chemical integrity and nutritive quality.

CONCLUSION

The chemopreventive rationality for the phytochemical designing is based on the selection of bioactive phytochemicals.This formulation designing deals with preservation of vitality, immunity, youthful luster, strength, intelligence, memory and tissue integrity. The natural product formulation credits all these positive benefits of ayurvedic elegance. The ayurvedic dietary treatment through biovitalizers is based on documented Indian wisdom and knowledge of Vedas. It gives us prudential message that mythological and medico-religious genesis of Ayurveda should not be disdained by modern chemotherapies. The interesting aspect of this formulation is that natural occurring structures have anti-tumor functionalities for alternative medicine system.

The modern ayurveda is undergoing futuristic adaptation by coordinating with western modernity. This integration might open a new arena of therpeutics in which the ancient values of the herbal medications would be renovated.The ayurvedic heroism of Baba Ram Dev Ji once again gave a message to safeguard the human body against the physiologically incompatible substances

ACKNOWLEDGEMENT

The authors express their gratitude to Prof. B. K. Razdan (Ex – Director of SBSPGI) & Prof. M.S. Rawat (Ex – Vice Chancellor of H.N.B. Garhwal University Srinagar) for their kind support & encouragement.

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