ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation Journal Home Page: https://ijrps.com

Awareness of Medical Applications of Gingko Biloba Among Dental Students

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Article History:

Received on: 03 Jul 220
Revised on: 05 Aug 2020
Accepted on: 11 Aug 2020

Keywords:

Awareness,
Gingko biloba,
students,
dementia

ABSTRACT

Herbal medicines reflect a significant portion of new interest in alternative therapies and Ginkgo biloba (GB) features significantly throughout this regard. The GB concentrate and any of its constituents are already thoroughly researched in terms of its impact on behavioral, physiological and psychological consequences linked with neurological and vascular conditions. The purpose of this survey was for assessing the awareness of medical applications of Gingko Biloba amongst dental students. A cross-sectional survey was conducted with a self-administered questionnaire with 10 queries circulated among 100 dental students. The questionnaire assessed the awareness about Ginkgo bilobatherapy in medical applications, their anti-dementia properties, anti alziemer properties, anti-ageing activity, anti-inflammatory activity, and its mechanism of action and side effects. The responses were recorded and analysed.8% of the respondents were aware of the medical applications of Gingko Biloba therapy. 6 % were aware of the anti-dementia activity of Gingko Biloba therapy, 5% were aware of anti alziemer properties of Gingko Biloba therapy, 6% were aware of anti-ageing properties of Gingko Biloba therapy, 5% were aware of anti-inflammatory properties of Gingko Biloba therapy, 5% were aware mechanism of action and side effects of Gingko Biloba therapy. The awareness about the usage of Ginkgo biloba therapy in medicinal applications is low among dental students. Increased awareness programs and sensitization and continuing dental education programs along with greater importance to the curricular modifications, can further enhance knowledge and awareness about Ginkgo biloba therapy.

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ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v11iSPL3.3053

Production and Hosted by

IJRPS | https://ijrps.com

INTRODUCTION

Phyto products represent a considerable segment of the present enthusiasm for elective medicines and Ginkgo biloba (GB) figures noticeably in this intrigue. Ginkgo biloba is taken from the leaves of the Maiden Hair sapling, that is believed to live 2,000 to 4,000 years (Isah, 2015). The belief in the medicinal potential of GB can be traced back nearly 5,000 years to ancient China, where healer Chen Noung (2767 to 2687 BC) described the rehabilitative abilities of this plant. The indications covered heart and lung ailments with evidence that drawing in its steam and drinking up its tea is palliative to all asthma and also bronchitis (DeFeudis and Drieu,

2000).

Herbal medicines reflect a significant portion of new interest in alternative therapies and Ginkgo biloba (GB) features significantly throughout this regard. The GB concentrate and any of its constituents are already thoroughly researched in terms of its impact on behavioral, physiological and psychological effects related to neural and vascular disorders. Specific capacities and disorders include deficit memory, reaction time, attention, concentration, psychomotor ability, impairment, mind-set, performance, and pace preparation data. GB has also been used tentatively to compensate for the deficiencies and symptoms of dementia and age-related Alzheimer, terrible mental illness, coma, multi-infarct dementia, cortical coronary artery disease, neurological dysfunction, cerebral oedema, emotional stress, detrimental glutamate effects, addiction, apoptosis, tinnitus, sexual deterioration, and macular degeneration (Kleijnen and Knipschild, 1992; Lin *et al.*, 1999). The purpose of this survey was for assessing the awareness of medical applications of Gingko Biloba amongst dental students.

MATERIALS AND METHODS

A cross-sectional survey was conducted with a self-administered questionnaire with 10 queries circulated among 100 dental students. The questionnaire assessed the awareness about Ginkgo bilobatherapy in medical applications, their anti-dementia properties, anti alziemer properties, anti-ageing activity, anti-inflammatory activity, and its mechanism of action and side effects. The responses were recorded and analysed.

RESULTS AND DISCUSSION

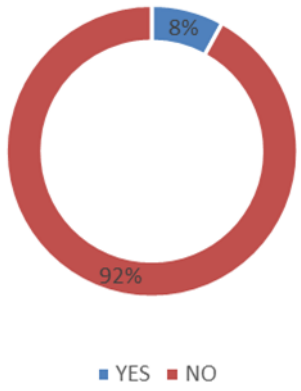

Figure 1: Awareness of the medical applications of Gingko Biloba therapy

8% of the respondents were aware of the medical applications of Gingko Biloba therapy (Figure 1).

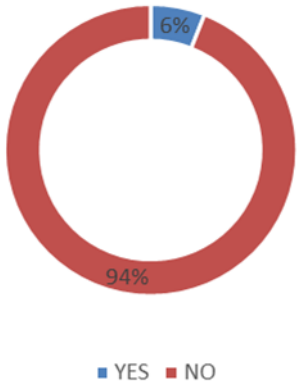

Figure 2: Awareness of the anti-dementia activity of Gingko Biloba therapy

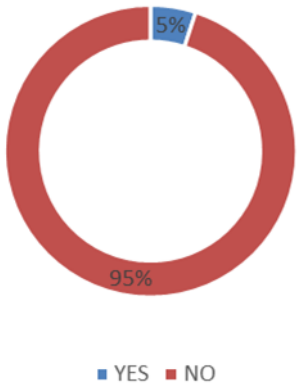

Figure 3: Awareness of the anti alziemer activity of Gingko Bilobatherapy

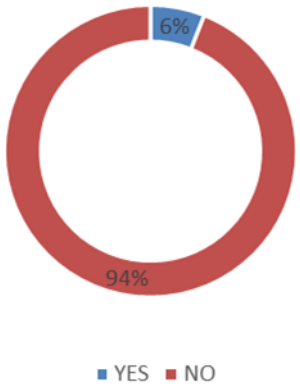

Figure 4: Awareness of the anti-ageing activity of Gingko Biloba therapy

6 % were aware of the anti-dementia activity of Gingko Biloba therapy (Figure 2), 5% were aware of anti alziemer properties of Gingko Biloba therapy (Figure 3), 6% were aware of anti-ageing properties of Gingko Biloba therapy (Figure 4), 5% were aware of anti-inflammatory properties of Gingko Biloba therapy (Figure 5), 5% were aware mechanism of action and side effects of Gingko Biloba therapy (Figure 6).

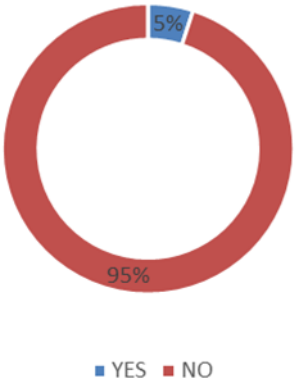

Figure 5: Awareness of the anti-inflammatory activity of Gingko Biloba therapy

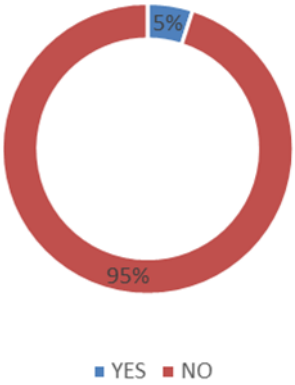

Figure 6: Awareness of the mechanism and side effects of Gingko Biloba therapy

EGb 761 is a metabolic agent known to be responsible for Gingko Biloba herb ingredients normalized to 24 per cent ginkgo-flavone glycosides and 6 per cent terpenoid. Significant components of EGb 761 (> O.l per cent) are flavonol monoglycosides (e.g. quercetin-3-Q-glucoside, quercetin-3-O-rhamnoside, and 3'-O-methylmyricetin-3-0-glucoside), flavonol diglycosides, flavonol triglycosides, coumarosides, natural acids, and steroids liable for the different system of action (Li and Wong, 1997; Moreau *et al.*, 1988).

Vasomodulatory impact: GBE has been shown to have constraining or delayed effects on vessels in a state-subordinated manner in animal model. GBE increases the aggregation of norepinephtine and induces Ca2 + dependent choking of the discrete aorta as well as vena cava. Notwithstanding increased thoughtful incitement, the constrictor impact may likewise include reduced catechol-0-methyltransferase (COMT) movement or fractional reuptake hindrance. Rather than constrictive components, the late effects have all the earmarks of being endothelium-subordinate. alternative methodologies could include the inhibitory activity of MAO, the release of prostacycline (PGIz), percent beta-adrenoceptor agonism, enhanced intracellular sequestration of Ca2 +, rapid increase of nitric oxide syntbaae, decreased expression of nitric oxide (NO) or lowered lipid peroxidation (Kobuchi *et al.*, 1997).

Metabolic consequences: GBE in smooth muscles induces an increase in glucose consumption and glycogen mixture in a subjugated manner. Research on hypoxic endothelial cells shows that GBE and bilobalide can prolong the onset of hypoxic glycolysis by extending out the period of adenosine triphosphate (ATP). However, the basic instruments remain muddled. Actuating factor operation antiplatelet. GBE tends to inhibit platelet aggregation by increasing endothelial-inferred thrombolytic groups. Ginkgolide B aspect of the terpene division has antiplatelet enacting factor (PAF) characteristics. In addition, significantly following the preincubation of PAF with platelets, ginkgolide B provides a virtually total withdrawal of bound PAF. This result is important due to the PAF 's argument in the pathogenesis of oedema, inflammation and hypercoagulable conditions. The properties of antioxidants.

GBE has been shown to cause the pulverization of various free radicals, including OH, O*-, diphenylpicrylhydrazile radical, including adriamycyl radical. It can rummage NOs and decrease nitrate levels in a dose-dependent way, offering further help for its job as wide range scrounger." In vitro and in vivo studies show that the flavonous portion of GBE can inhibit lipid peroxidation and platelet aggregation. & The flavonous segment can interfere with the ability of ginkgo to protect physiological structures from receptive reactive oxygen. This may be useful in reinforcing the effects of blood lipoprotein oxidation that give rise to evidence and accumulation of atherosclerotic plaques accompanying hypoperfusion-reperfusion in hypoxic states (Spinnewyn *et al.*, 1987; Marcocci *et al.*, 1994; Brunello *et al.*, 1985).

Focal Effects: GBE applies transmitter and receptor effects that are likely to interfere with radical search / restraint, hemodynamic / metabolic equilibrium, PAF resistance, MAO and COMT impediment, alpha-agonist, receptor thickness modification, and NO synthase hindrance. Proof shows that GB can alter and restore a variety of focal phases and conditions. GBE has induced increases in norepinephtine production in rodents, alpha-2-receptor density, muscarinic acetycholine (mACh) and serotonin (5HT) receptor surface area, but also decreases beta-adrenoceptor density (Brunello *et al.*, 1985; Hellegouarch *et al.*, 1985).

GB appears to be applying its effects through its cellular reinforcement and toward PAF activity, despite its stimulatory influence on cerebrovascular tone, receptor function, glucose absorption and electroencephalographic function. Dose Based effects have been observed under accompanying conditions: subjective hindrance, cerebrovascular insufficiency, tinnitus, hypoxia, vestibular bloats as well as ageing (Brailowsky *et al.*, 1991; Hoerr and Nacu, 2016).

GBE is linked to extended prostacycline amalgamation and the hindrance of radicals induced by arachidonic corrosive cascade. GB has restricted the frequency of personalized cell movement through optimized rodent cerebellar neurons. Overall, GBE appears to have a protective effect on rodent cerebellar neurons during oxidative damage (Bars *et al.*, 1997).

Ginkgo has been widely covered and has demonstrated no adverse drug effects. It should be noted, in any case, that because ginkgo has the properties of a monoamine oxidase (MAO) inhibitor, it can have a synergistic effect when coupled with other MAO inhibitor drugs. Since ginkgo acts as an antiplatelet acting factor, warning should be used when guided to anticoagulants (Sachikonye and Mukanganyama, 2016; van de Ven, 1997).

CONCLUSION

The awareness about the usage of Ginkgo biloba therapy in medicinal applications is low among dental students. Increased awareness programs and sensitization and continuing dental education programs along with greater importance to the curricular modifications, can further enhance knowledge and awareness about Ginkgo biloba therapy.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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