

Functional Foods may be Dysfunctional: A South Asian Perspective

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Abstract

This communication describes a few functional seeds and spices, commonly consumed in South Asia, which may impair the absorption of drugs that are used in diabetes and medical management. The aim of this article is to highlight the possibility of these foods having a 'dysfunctional', rather than functional effect on health. Physicians should include questions about the use of these spices in their history taking.

Keywords: Diabetes, drug interactions, food interactions, seeds, semaglutide, spices, thyroxine.

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Introduction

Food and nutrition are an integral part of health management. Persons living with chronic disease frequently use functional foods as a part of their treatment,¹ especially in South Asia. At times, these foods and beverages are advised by a health care provider who is different from the primary physician, or are started by the patient on their own. Many persons may start and stop these foods on their own, without informing the primary doctor.

Spices

Spices are commonly used as functional food across South Asia. Some of these are listed in Table. These are used for their anti-inflammatory, anti-oxidant and anti-aging properties. Some of the spices are thought to have glucose-lowering, lipid-lowering and vasculo-tropic benefits.

Taken alone, in moderation, the use of these spices is encouraged in persons with diabetes and obesity. A recently published network meta-analysis of randomized controlled trials suggests that herbal compositions are helpful in maintaining healthy glycaemic status with no side effects.²

Apart from these, other seeds like chia and perilla are also

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Table: Functional spices in South Asian cuisine.

English Name	Urdu Name
Apple cider vinegar	Sirka
Cardamom	Ilaichi
Cinnamon	Daalchini
Clove	Loung
Coriander	Dhaniya
Cumin seed	Zeera
Fennel	Saunf
Fenugreek seeds	Methi
Mustard seeds	Sarson seeds
Perilla seeds	Bhang Zeera
Sesame seeds	Til
Turmeric	Haldi
Thymol seeds	Ajwain
Black mustard	Rye

used as functional foods by those trying to lose weight. Chia seeds swell when soaked in water, and may impair gastrointestinal motility as well as absorption.

Drugs that require an empty stomach/specific timing

There are many medications that require to be taken on an empty stomach, or to be administered with a specific drug-meal time gap. These include medications used in internal medicine, such as proton pump inhibitors and anti-emetics, those used for glucose lowering, like semaglutide and sulfonylureas, and endocrinotropic drugs, e.g., L-thyroxine and alendronate.³⁻⁶

Clinical challenge

At time, patients present with poor, or variable, glucose or thyroid control, for which no obvious cause can be found. This often prompts detailed investigations, which yield no answers. In such cases, it may be useful to take a detailed dietary history. One should enquire whether the individual is taking any functional food, including spices mixed in milk, yoghurt or water. Often, families do not consider these as 'food' and fail to report their consumption, unless asked by direct questioning.

The use of these functional foods may impair absorption of drugs such as L-thyroxine and semaglutide and reduce their efficacy. Hence, their history should be ruled out in persons with inadequate or variable thyroid or glycaemic control, prior to exploring other differential diagnoses. We have experienced this spice-drug interaction in our clinical practice, and enquire about spice usage, for medical

purposes, as part of routine history taking.

Management

Counsel patients not to start, or stop, functional foods or spices, without sharing this information and discussing with the primary care provider. Explain that functional foods do have a 'function', and that this may become 'dysfunctional' at times. Two rights may make a wrong: this concept is easily understood by the South Asian population, which is aware of food stuffs that cannot be matched with each other. One may use the analogy of 'hot' and 'cold' medicines and foods, to facilitate socio-centric understanding of the concepts.

Persons taking L-thyroxine, and semaglutide should be advised not to consume any foods or spices within a few hours of taking the drug. The same rule may be followed for persons on other medications, if no obvious reason is found for lack of desired therapeutic effect. This is especially important for chia seeds, cumin, and fenugreek.

Summary

Functional foods, including spices and seeds, are an integral part of the South Asian cuisine. While these have multiple health benefits, they may reduce the absorption of certain drugs such as L-thyroxine and semaglutide.

This can lead to inadequate or variable control of parameters. This aim of this communication is to sensitize primary care professionals to the need for detailed dietary history taking, while managing such patients.

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