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File: ■ Triphala
■ Ayurveda
■ Therapeutic Uses

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RE: Therapeutic Uses of Triphala, an Ayurvedic Polyherbal Remedy

Peterson CT, Denniston K, Chopra D. Therapeutic uses of triphala in Ayurvedic medicine. *J Altern Complement Med*. August 2017;23(8):607-614.

Triphala, an Ayurvedic polyherbal remedy, has over 1000 years of documented use. It's name means "three fruits." It consists of the fruits of amla (Indian gooseberry, *amalaki*; *Phyllanthus emblica* syn. *Emblica officinalis*, Phyllanthaceae), belleric myrobalan (*bibhitaki*; *Terminalia bellirica*, Combretaceae), and chebulic myrobalan (*haritaki; T. chebula*) in roughly equal proportion. Triphala is used as a basic treatment for gastrointestinal (GI) health and longevity, with many other potential therapeutic uses. The authors conducted a search of the PubMed database for published studies of triphala's uses. Search dates and inclusion criteria are not disclosed.

In Ayurveda, triphala is a *tridoshic rasayana*, meaning it is useful for patients of all ages and physical types. Historically it is considered a multiuse therapeutic agent and possible panacea. *Rasayanas* are tonics for strength and immune health. Triphala is also classified as a digestive aid, mild laxative at moderate doses, bowel tonic at low doses, purgative at high doses, carminative, expectorant, antispasmodic, and bronchodilator. Many other uses are described in Ayurvedic texts and anecdotally. In Ayurvedic pharmacology, it is said to have every taste except salty. Its potency (*virya*) is neutral and its post-digestive effect (*vipaka*), sweet. amla is considered heavy and dry. Belleric myrobalan and chebulic myrobalan are considered light and dry. Western pharmacology describes triphala's tannins; the potent polyphenolic antioxidants gallic, ellagic, and chebulinic acids; flavonoids quercetin and luteolin; saponins, anthraquinones; amino acids; fatty acids; and carbohydrates. Triphala polyphenols are metabolized by gut microbes into other compounds with potential bioactivity.

Some potential therapeutic benefits of triphala with supporting evidence stem from its free radical scavenging, immunomodulatory, appetite stimulating, antipyretic, analgesic, antimutagenic, and wound healing effects. It may promote proper digestion and nutrient absorption, relax bile ducts, prevent immunosenescence, maintain endocrine system homeostasis, and boost red blood cell and hemoglobin production. Among other effects discussed more fully, animal studies support triphala's use as a stress-protective adaptogen, protecting against cold-induced behavioral and biochemical changes, and, in another study, noise-induced metabolic changes, mediating the antioxidant and cell-mediated immune response. In rodents, it protected against stress-induced gastric ulcers. Triphala's stress protective effects are likely due to its antioxidant content.

Best known for benefits to GI health, water and alcohol triphala extracts prevented diarrhea in vivo. Its enteroprotective effects are again likely due to its antioxidants. In mice, triphala's reduction of colitis was attributed to antioxidants and flavonoids. In a human clinical trial, it reduced constipation, mucus, abdominal pain, hyperacidity, and flatulence in patients with GI disorders while improving frequency, yield, and consistency of stools.

Triphala also has anti-obesity and antidiabetic effects. In a 12-week, double blind, randomized placebo-controlled trial (RCT), participants who took triphala lost about 5 kg compared with control. Mean fasting blood sugar and fasting serum insulin levels also fell in the treated group compared to placebo. Triphala's hypoglycemic effects appear to be similar to those of miglitol and acarbose, pharmaceutical drugs for type 2 diabetes (T2D) which work as alpha-glucosidase inhibitors. Tannins likely contribute to triphala's anti-glycation effects. . Lower glucose levels also likely reduce glycation. In a clinical study of T2D patients, triphala (5 g/day for 45 days) significantly lowered fasting and postprandial blood glucose. Sorbitol may contribute to this effect, while eligatannins and gallotannins enhance PPAR-alpha and -gamma signaling, increasing insulin response and glucose uptake without fat cell genesis.

Animal studies reported reductions in total cholesterol, low-density lipoprotein (LDL) cholesterol, very low-density lipoprotein (VLDL), free fatty acids, and triglycerides, and increases in high-density lipoprotein (HDL) with triphala supplementation. Chebulic myrobalan may be most active in this regard. Lower cholesterol levels reduce risks of metabolic syndrome and cardiovascular disease. Triphala is also reported to be hepatoprotective.

Many studies report triphala's antimicrobial activity, with some finding stronger effects from alcohol than water extracts and some the opposite. Bacteria affected included antibiotic-resistant isolates, multi-drug resistant strains, and bacteria isolates from human immunodeficiency virus (HIV) patients. Gram-positive and -negative species were affected. Various enteric bacteria were powerfully inhibited in vitro by triphala. Triphala acts against *Aspergillus* spp. and possibly other pathogenic fungi.

Bacteria that cause dental plaque, tooth cavities, and periodontitis were controlled with triphala equally as well or better than with conventional mouthwashes. RCTs on triphala's effects on dental and oral health reporting positive results include some with young adults, teens, and children. Triphala mouthwash may reverse precancerous oral lesions associated with tobacco (*Nicotiana tabacum*, Solanaceae) use in young adults. Matrix metalloproteinases (MMPs) contribute greatly to gum disease progression. MMP activity was reduced ex vivo with triphala. Further studies should identify triphala's potential in dentistry.

Clinical trials are needed to elucidate the clinical utility of triphala's radioprotective effects. One clinical trial has found that triphala increased cytotoxic T and NK cells over control treatment. It should be explored as a possible adjunctive treatment in colon and other cancers. Anti-cataract effects, again attributed to its antioxidants, are reported in vivo. It has potential in arthritis and other chronic inflammatory diseases. Traditional use as an antiaging agent is supported by its stimulation of collagen and elastin, greater cellular antioxidant capacity, and less hyperpigmentation in human skin cells in vitro. Finally, multifactorial variability in efficacy of herbal treatments may in part be due to differences in human gut microbes. Triphala enhances proliferation of some beneficial species. Co-administration with probiotics may enhance its efficacy and microbiome health.

—Mariann Garner-Wizard

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