The Longwood Herbal Task Force

(http://www.mcp.edu/herbal/default.htm) and

The Center for Holistic Pediatric Education and Research

(http://www.childrenshospital.org/holistic/)

Clinician Information Summary

MISTLETOE

(*Viscum album* spp.)

SUMMARY

European mistletoe (*Viscum album)* is most often used as a palliative cancer therapy and an immunostimulant; it has also been historically used as an antihypertensive and abortifacient. Its primary chemical constituent, lectins, are cyototoxic glycoproteins that cause cells to agglutinate. In eight animal studies, mistletoe preparations inhibited solid tumor growth and metastasis, but two animal studies showed no inhibitory effect on carcinogensis. Mistletoe enhances some aspects of immune function in humans; studies of its use as a palliative cancer treatment have been small and had contradictory results. Mistletoe can be quite toxic, and allergic reactions and a few cases of death have been reported with mistletoe ingestion. American mistletoe, or *Phoradendron,* is a different species and is rarely used used medicinally.

POPULAR USES: Pallitative cancer therapy, immunostimulant, antihypertensive, coagulant, degenerative joint disease.

CHEMICAL CONSTITUENTS: Lectins, viscotoxin, polysacchrides (galacturonian and arabinogalactan) and alkaloids.

SCIENTIFIC DATA

In vitro: V. album induces apoptosis and has cytotoxc effects against cancer cells. It also stimulates proliferation of progenitor cells and enhances proliferation of T-cells.

In animals: Eight of ten studies found mistletoe inhibited metastasis, decreased nodule formation, and reduced tumor size. Two found that mistletoe did not inhibit carcinogenesis.

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In humans: In a small case series in hypertensive adults using an herbal combination containing mistletoe, there was a decrease in blood pressure over three to five months. Healthy volunteers given subcutaneous mistletoe extract had an increase in peripheral mononuclear cells. A small case series and two small randomized trials reported that parenteral administration of mistletoe, increased immune function. Two small studies in patients with advanced carcinoma receiving mistletoe treatment showed no response. A retrospective analysis of European patients with carcinomas of the colon and rectum found that mistletoe therapy significantly reduced the recurrence rate.

TYPICAL DOSES: Doses are not standardized. Please refer to the monographs for a discussion of dosages.

TOXICITY AND SIDE EFFECTS

Side effects: Allergic reactions, including local reactions at the injection site, have been reported. Nausea, vomiting, diarrhea, chills, fever, headaches, angina, hypotension, miosis, mydriasis, seizures, coma, and death have been reported with oral ingestion of the mistletoe plant and berries.

Interactions with other medications: Could theoretically interact with cardiac medications and antihypertensives. Contraindicated in patients taking MAO inhibitors because some mistletoe preparations contain tyramine. Interactions with other cancer medications and other herbal immune modulators are unknown.

Contraindications: Unknown.

Pregnancy and lactation: No safety studies.

Pediatric use: Not traditionally used in children. There are no clinical safety studies in this age group.

ADDITIONAL REFERENCES OR RESOURCES

- University of Texas Center for Alternative Medicine Research in Cancer: http://www.sph.uth.tmc.edu/utcam/summary/mistletoe.htm
- Home: http://www.mcp.edu/herbal/