

Mills and Bone Academy

Educational Article

Myrrh: A Key New Weapon in the Constant Fight against Parasites and Other Stealth Pathogens— Kerry Bone

Myrrh has been used as a medicinal herb for thousands of years. It is mentioned several times in the Bible in writings as old as Psalms and the Song of Solomon, and of course it is well known as one of the three gifts that the Magi brought to Jesus Christ.ⁱ Despite this ancient record of use, clinical trials on myrrh were lacking until recently, when a group of Egyptian scientists examined its value in the treatment of fascioliasis (liver fluke).ⁱⁱ

Since then a number of other clinical studies have been published which suggest that the clinical use of myrrh represents a significant advance in the herbal treatment of parasites. Although its activity has been mainly shown against exotic infestations, it is likely to have even better activity against the less virulent parasites that occur in Australia, including the bothersome unicellular parasites. What is particularly interesting is that myrrh seems to be active against parasites that infest deeper in the body than the gut, such as in the liver and bladder, as in the case of schistosomiasis. (Schistosomiasis or bilharzia is a common worm infestation in developing countries. The parasite penetrates the skin after contact with infested water and infects first the liver and

then other organs such as the bladder. The disease can cause serious complications and can be fatal.) This implies that myrrh will be effective against other pathogens that hide deeper in the body.

Almost all members of the myrrh tree family possess resin canals in their stems and when cracks and fissures form in the bark the resin exudes spontaneously. This yellowish-white treacle soon hardens in the heat to reddish brown crystalline masses. In some cases, cuts are made in the bark to encourage the resin production.ⁱⁱⁱ This resin is the part of the tree that is used to treat parasites.

Clinical Trials

Liver fluke

In the first reported study, the action of a myrrh extract in 7 patients with fascioliasis (liver fluke) was investigated.^{iv} The treatment was given at a dose of 12 mg/kg per day for 6 consecutive days in the morning on an empty stomach. Patients were followed for 3 months. The therapy proved to be effective, with

pronounced improvement of the general condition of patients and amelioration of all symptoms and signs of the parasite. A dramatic drop in the egg count was detected at the end of treatment. Eggs were no longer detectable in the faeces 3 weeks after treatment and after a follow-up period of 3 months. The patients' clinical signs returned to normal. No signs of toxicity or adverse effects were observed. The authors concluded that the formulation of myrrh was safe, well tolerated, and effective for treating fascioliasis.

In another open-label controlled study, 68 patients were included, 30 with fasciola infection, 20 were infected with other parasites but not fasciola (infected control group) and 18 were parasite-free (normal control group).^v Patients with fascioliasis received myrrh extract at a dose of 10 mg/kg, one hour before breakfast for six consecutive days. Myrrh extract was found to have a high therapeutic efficacy (100% cure rate) on fascioliasis without remarkable side effects.

A large field trial was conducted in Egypt to assess the efficacy and safety of a myrrh extract (1200 mg per day for 6 consecutive days) for the treatment of human liver fluke.^{vi} Evaluation of 1019 individuals revealed the presence of fascioliasis in 17. Cure rates in these patients were 88.2% and 94.1% respectively at 2 and 3 months following treatment with myrrh.

A total of 21 children with fascioliasis (8 boys and 13 girls) with a mean age of 10.4 years and 8 children infected with *Schistosoma mansoni* (6 boys and 2 girls) with a mean age of 11.4

years were treated with a myrrh extract in an open label trial.^{vii} Also, 10 healthy matched children acted as controls. Diagnosis was based on the detection of *Fasciola hepatica* or *Schistosoma mansoni* eggs in stool samples. Myrrh extract was given at 10 mg/kg/day one hour before breakfast for 3 consecutive days in schistosomiasis and for 6 days in fascioliasis. The cure rate was 90.9% in fascioliasis and 100% in schistosomiasis at 4 weeks' post-treatment. After a second course of treatment those fasciola patients who remained positive were cured. Total IgE was significantly higher in fasciola and schistosoma patients before treatment compared to controls ($p < 0.001$ and 0.005 , respectively) and decreased significantly with therapy ($p = 0.001$ and 0.036). There were also favourable and significant shifts in IL-1 beta, IL-5 and IL-4.

A total of 60 patients with fascioliasis ($n = 15$), schistosomiasis ($n = 40$) and heterophyiasis ($n = 5$) were treated with myrrh extract at 10 mg/kg/day for 6 consecutive days an hour before breakfast in an open-label study.^{viii} Results showed a significant improvement in symptoms with minimal side effects and cure rates for each parasite in excess of 90% after 3 months.

Bilharzia (Schistosomiasis)

An open-label trial was conducted on 204 patients suffering from bilharzia in Egypt.^{ix} Myrrh extract was given at a dose of 10 mg/kg for 3 days and found to effect a cure rate of 91.7%. Retreatment of the nonresponsive cases with the same dose for another 3 days increased the overall cure rate to 98%. Myrrh was observed to be well tolerated and side effects were mild and transient. Twenty cases

provided biopsy specimens 6 months later and none of them showed living eggs.

Among 1019 individuals examined in an open-label field trial, the prevalence of *Schistosoma haematobium* and *S. mansoni* (the two different parasites that cause bilharzia) were 4.2% and 2.4% respectively and the mean egg count were 33.2 eggs/10 mL urine and 113.3 eggs/stool.^x Most of the patients were less than 15 years old (56.4% and 53.8%) and male (56.4% and 53.8%). All cases were treated by myrrh extract as two capsules (600 mg) on an empty stomach an hour before breakfast for six consecutive days and were followed up clinically and parasitologically by urine and stool analysis. The parasitological cure rate after three months was 97.4% and 96.2% for *S. haematobium* and *S. mansoni* cases respectively, without any major side effects. Patients not completely responding to a single course of treatment did show a marked reduction of egg levels.

Other parasites

Myrrh has also been investigated in the treatment of human hymenolepiasis (a type of tape worm infection). In 51 cases of infestation with *Hymenolepis nana* and 2 cases of *H. diminuta* the extract was given at a dose of 10 mg/kg/day for 9 consecutive days one hour before breakfast.^{xi} High cure rates based on parasite testing (>90%) were confirmed in this open label trial for the patients who completed the course of treatment.

Oral use of myrrh extract (600 mg/day for 6 to 8 days) was evaluated in 13 women with metronidazole-resistant trichomoniasis

(*Trichomonas vaginalis*) in an open-label trial.^{xii} Successful treatment occurred in 11 patients

Myrrh has also been tested in uncontrolled field trials for the treatment of various parasitic infestations in sheep. This indicates that it has activity against an even wider range of parasites. For example, in sheep naturally infected with liver fluke, doses of 300 to 600 mg of extract were administered for 1 to 3 days.^{xiii} A total dose of 900 to 1200 mg of extract gave a complete cure rate as assessed by stool or physical examination.

In sheep infected naturally with the tapeworm *Moniezia expansa*, a total dose of 3600 mg of myrrh extract (as 900 mg per day for 4 days) or 4800 mg (as 600 mg of extract for 8 days) gave 100% cure rates.^{xiv}

Dosage

The antiparasitic effects require higher than normal doses for short periods (typically 600 mg of dry extract for 3 to 9 days). This 600 mg of myrrh extract used in the trials probably corresponds to about 2 to 3 g of crude resin or 10 to 15 mL of a 1:5 tincture. It should be kept in mind that myrrh tincture is made in 90% alcohol to dissolve the resin, and this amount of tincture will contain a lot of alcohol. After a break of around 4 to 14 days the dose can be repeated for another 3 to 9 days. As many of such pulsed treatment cycles can be applied as needed. It is important to use the whole extract of myrrh, not just the essential oil. In fact, the sticky resinous part of the extract is probably much more important for myrrh's antiparasitic activity.

Adverse reactions

Myrrh is an herb that is prone to causing allergic reactions. This is testimony to its capacity to put the immune system on high alert for pathogens. Contact allergy has been reported in the use of myrrh for topical application.^{xv,xvi,xvii,xviii} Continued topical use of essential oils, including those of myrrh, were associated with a deterioration of symptoms in a study on children with eczema, suggesting a possible build-up of contact sensitivity.^{xix} Cases of allergy due to oral administration of myrrh have been reported in traditional Chinese

medicine. The patients received a formulation containing myrrh, which was subsequently identified as the allergen.^{xx}

However, these types of allergic reactions are unlikely to occur from the short-term pulsed dosage use of myrrh for parasites as described above.

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