

Title of Project

Clinical trial to evaluate aloe vera gel enemas in mild to moderately active distal ulcerative colitis (UC)

Lay Summary

Aim: To assess the effects of aloe vera enemas for patients with active distal ulcerative colitis in relation to remission of or improvement in symptoms and endoscopic and microscopic changes seen in active UC, and on colonic bacterial flora.

Background: We plan to undertake a clinical trial of the herbal remedy, aloe vera gel, given as an enema, in patients with ulcerative colitis. Aloe vera gel is derived from the pulp of a stemless drought-resisting succulent of the lily family. It has been used medicinally for over 5,000 years in various ancient and modern civilisations. It contains over 70 biologically active compounds and is claimed to have anti-inflammatory, anti oxidant, immune boosting, anti-cancer, healing, anti-ageing and anti-diabetic properties. It is widely promoted for the treatment of digestive disorders, skin diseases and wound healing. Although there is as yet little scientific evidence to support these claims, trials have shown topical aloe vera gel to work for psoriasis and aphthous stomatitis (a chronic ulcerative condition in the mouth).

Rationale for trial: Conventional drug therapies for inflammatory bowel disease are not always successful in achieving remission or preventing relapse, and may cause serious side effects. Therefore many patients seek alternative options. In our own survey, aloe vera was the single most widely used herbal therapy. This led us, a few years ago, to investigate the effect and safety of aloe vera gel given by mouth for four weeks in patients with mild-to-moderately active ulcerative colitis. This trial showed that aloe vera produces and improvement in colitis more often than in placebo; it also reduced microscopic inflammation and appeared to be safe.

Topical enemas, which are given directly onto the rectal and colonic lining, are the preferred route of administration for treatment for ulcerative colitis affecting the lower colon because higher concentrations can be achieved with lower incidence of side effects. Aloe vera given by enema may be more potent than by mouth.

Trial: The trial will be carried out at UCLH Foundation NHS Trust. Aloe vera gel will be given as an enema (100mls/day) for six weeks to 19 patients with a flare up of colitis affecting the left side of the colon (distal colitis). All patients will continue with their regular medications during the trial period and will be seen regularly for assessment of response. Outcomes measured will be remission or improvement of clinical symptoms (eg bleeding, diarrhoea, urgency), appearance of the rectal lining through the sigmoidoscope (according to a scoring system for bleeding, ulceration and pus),

appearances of biopsies through the microscope (according to an inflammation score) improvement in quality of life (measured by a scoring questionnaire previously validated for IBD) and an overall impression, by patient and doctor, of improvement or deterioration. Trial visits are scheduled at -1, 0, 2, 4, 6 and 16 weeks. Additional visits will be possible at any time, as necessary, in particular in the event of symptomatic deterioration. Sigmoidoscopy and biopsy for visible and microscopic changes will be done at weeks 0 and 6 and an additional sigmoidoscopy will be done at week 1 for assessment of early changes in the bacterial flora which live within the colon which may affect subsequent reduction in inflammation (see below). Strict criteria for early withdrawal of non-responders or those whose condition deteriorates are established.

Bacterial flora: There are several possible mechanisms by which aloe vera may work. One is that the sugar molecules in aloe vera gel act as nutrients for bacteria which normally live in the colon. It has been shown that some other non-digestible carbohydrates alter the mixture of bacteria in the bowel favouring the beneficial (friendly) probiotic bacteria and reducing numbers of bacterial strains which may cause inflammation. We already know that some bacteria are found in the gut wall more commonly in active UC and that probiotics can be effective as a treatment for bowel inflammation after pouch surgery. During the trial we plan to look at levels of different strains of bacteria lining the colonic wall to see whether these are altered by aloe vera, using an accurate method of detecting bacteria attached to the colon lining in biopsies using specific markers for different types of bacteria which can be detected by fluorescence.

Potential benefit for patients with IBD: If aloe vera proves to be effective as an enema treatment for active distal colitis it will be an important addition to the conventional therapies available, particularly for patients who are allergic or intolerant of other treatments such as mesalazine, or who fail to respond to the usual drugs. Distal colitis can be a difficult condition to treat and a new effective enema is likely, for many patients to be preferable to moving onto immunosuppression or even considering surgery.