Traveller's 'funny tummy'

Reviewing the evidence for complementary medicine

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The gastrointestinal system is sensitive to both the place and means of travel and traveller's diarrhoea and motion sickness are among the most prevalent travel related conditions. There is now evidence to suggest that both of these ailments may be treated with safe and inexpensive complementary medicines.

Probiotics for traveller's diarrhoea

Traveller's diarrhoea, aka 'Bali (or Delhi) belly', 'Montezuma's revenge', or 'tourist trot' is estimated to affect more than 60% of travellers to developing countries (more than 15 million people annually) and in terms of frequency and economic impact is the number one health problem in international travel. Symptoms include vomiting, abdominal cramps, fever and diarrhoea; and while spontaneous cure usually occurs after 4 days, some patients may have symptoms for weeks, and some go on to develop irritable bowel syndrome.[1]

It is likely that stress, jet lag, unfamiliar food and water, along with disruptions to body rhythms during travel, disturbs the gut microflora that normally protects against attachment and colonisation by harmful micro-organisms, thus making travellers more susceptible to diarrhoea. In most cases (80–85%) of traveller's diarrhoea, the harmful micro-organisms are bacterial pathogens with the most common being *Escherichia coli*, although other bacteria, viruses and parasites may also be implicated.

Concerns about drug resistance prevent consensus guidelines recommending prophylactic use of antibiotics, however there is now good evidence to suggest that probiotics may provide effective prophylaxis by inhibiting pathogen attachment, enhancing the immune response and assisting in re-establishing normal microflora. A 2005 meta-analysis assessing the efficacy and safety of probiotics for the prevention of traveller's diarrhoea suggests that probiotics are safe and effective for the prevention of traveller's diarrhoea. The results of this meta-analysis, which pooled data from 12 high quality, randomised, controlled trials that included a total of 4709 patients, suggests that 85% of traveller's diarrhoea cases were prevented by probiotics (RR: 0.85; 95% CI: 0.79, 0.91 $p<0.001$).[2]

While probiotics appear to provide successful prophylaxis for traveller's diarrhoea, there are differences between probiotic products. The most commonly used strains include *Saccharomyces boulardii* and various lactobacilli and these should be provided in doses above 10^{10} organisms per day during the entire period of susceptibility. The viability and stability of the probiotic products may also influence their efficacy as killed preparations provide no protective effects. Some lyophilised (freeze dried) probiotics are stable at room temperature while others require refrigeration, which may not always be possible while travelling.

Evidence to date suggests that probiotics are safe and effective for the prevention of traveller's diarrhoea as well as being relatively inexpensive and well tolerated, even for prolonged use. So it may be that the best way to avoid a tummy bug while travelling is to take your own bugs with you!

Ginger for motion sickness

While traveller's diarrhoea is usually related to the place of travel, motion sickness or kinetosis is related to the means of travel, yet it may also respond to the use of complementary medicines with ginger being most likely to provide positive results.

Ginger (*Zingiber officinalis*) has been shown to have antiemetic as well as anti-ulcer, anti-inflammatory, analgesic and antimicrobial effects. While there is now strong evidence to support the use of ginger in treating the nausea of pregnancy, the evidence for its use in motion sickness is less clear, although generally positive.[3–5]

At least four studies have utilised experimental models of motion sickness with mixed results. The first study involving 36 undergraduate men and women who reported very high susceptibility to motion sickness found that ginger was superior to dimenhydrinate.[6] A second, double blind, crossover placebo study in eight healthy volunteers found ginger superior to placebo in reducing vertigo,[7] while a third study involving 28 volunteers found no significant protective effects for powdered or fresh ginger.[8] More recently, a double blind, randomised, placebo controlled crossover study showed positive benefits with ginger pretreatment on prolonging time before nausea, shortening

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recovery time and effectively reducing nausea.[9]

Only two randomised controlled trials of ginger for motion sickness could be found. An early double blind, randomised placebo controlled study involving 80 naval cadets found that 1 g of ginger was significantly superior to placebo in reducing symptoms of vomiting and cold sweats due to seasickness. Fewer symptoms of nausea and vertigo were also reported with ginger but the difference was not statistically significant.[10] In another randomised double blind study of seasickness involving over 1741 tourists on a whale watching safari, 500 mg of ginger was found to be as effective in treating of motion sickness as several common antiemetic medications with ginger preventing seasickness in 80% of the subjects during the 6 hour boat trip.[11]

While the evidence is less robust, these results suggest that people with a queasy stomach may benefit from adding ginger to their travel bag.

Conclusion

A meta-analysis of 12 high quality studies suggest that probiotics are safe and effective for the prevention of traveller's diarrhoea as well as being well tolerated with prolonged use. While the evidence is not as robust, there is evidence to support the use of ginger for treating motion sickness. It is suggested that both probiotics and ginger are useful additions to the travel bag.

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