35% relative to the first trimester, in contrast to the 16% average decrease in the years 1993–96. During the third trimester of 1997, the number of cases of diarrhoea decreased, yet were still 25% above the figures seen in the trimester of 1997, the number of cases of diarrhoea and dehydration admitted to the Rehydration Unit of Cayetano Heredia Hospital from 1993 to 1997.

In Peru and neighbouring countries affected by El Niño—Chile, Ecuador, and Colombia—we anticipate an outbreak of diarrhoea and dehydration in the coming summer months when the high seasonal temperatures will be exacerbated by the presence of El Niño. This outbreak will burden local health services treating infections and/or diseases for which temperature may be an important determinant. Should we prepare for another cholera outbreak? Over the past 2 years, few cases of cholera have been seen in Peru, mainly, we think, because there was no susceptible population left after the huge 1991 and 1992 outbreaks. Children born after the huge 1991 and 1992 outbreaks who were neither infected nor exposed to Vibrio cholerae are the most susceptible population now. V. cholerae can survive in a dormant stage in cool, brackish water, in association with plankton. When the water temperature rises, plankton blooms, and the population of V. cholerae increases. R Colwell has suggested that remote satellite sensing of plankton beds might be used as an early warning system to help predict outbreaks of cholera.

Analysts have examined the agricultural and economic implications of El Niño. Our data lead us to believe that it is equally imperative that we begin to examine El Niño’s implications on health and health care.


Melatonin in feverfew and other medicinal plants

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In 1995, the US magazine, Newsweek, named synthetic melatonin (N-acetyl-5-methoxytryptamine) the “Pill of the Year” for its potential health benefits. In the same year, there was a report associating chronic migraine headaches with lower circulating levels of melatonin. Edible plant tissues contain melatonin and their consumption increases the circulating melatonin supply in mammals. Commercial preparations of feverfew (Tanacetum parthenium), St John’s Wort (Hypericum perforatum), and Huang-qin (Scutellaria baicalensis) leaves are recommended as a medicine for the treatment for ailments of the nervous system based on anecdotal and historical evidence. Feverfew preparations, taken prophylactically, can reduce the frequency and severity of migraine attacks in some patients. The efficacy of feverfew has been attributed to a sesquiterpene lactone, parthenolide. However, a double-blind study indicated that parthenolide could not be the sole active ingredient in feverfew preparations. St John’s Wort has been called a “herbal tranquilliser” because a tea prepared from the flowers may benefit several neurological disorders but can also induce sensitivity to sunlight after long-term use. We questioned whether melatonin may be present in plants with historical medicinal value and pharmaceutical preparations of plant leaves.

Feverfew is known synonymously by four botanical names: Chrysanthemum parthenium (L) Bernh, Matricaria parthenium (L), Pyrethrum parthenium (L) Sm, and Tanacetum parthenium (L) Schultz Bip. All plants were obtained from Richter’s Greenhouses, Goodwood, Ontario, Canada, with the exception of St John’s Wort which was collected from roadside populations. Tanacet (Ashbury Biologicals Inc, Toronto, Canada), a commercial preparation of feverfew, was purchased locally. Leaf samples of feverfew plants were analysed for melatonin. Melatonin was found in relatively high concentration in two of the other medicinal plants, St John’s Wort and yellow root, with an average of 0.18% and 0.35% (green leaf and gold leaf) of leaf tissue or 0.143 μg/g of prepared tablet. An average Tanacet tablet contained 70–80 ng of melatonin and the packaging recommends 1–2 tablets per day over a period of months or years. Melatonin was found in relatively high concentration in two of the other medicinal plants, St John’s Wort and yellow root.
Huang-qin (table). The amount of melatonin found in feverfew, St John’s Wort, and Huang-qin was higher than previously found in edible-plant products. Plant tissues are a complex mixture of biochemicals. Melatonin in plant tissues may explain anecdotal evidence of physiological effects but also emphasises the need for complete biochemical characterisation of medicinal herbs.


4 De Weerdt CJ, Bootsma HPR, Hendricks H. Herbal medicines in leukotriene-dependent asthma. We searched for genetic polymorphism directed to regulation of LTC4S expression could predispose to this highly leukotriene-dependent asthma. We searched for genetic polymorphism in the LTC4S locus in our AIA patients.

The LTC4S gene was screened for by amplified-fragment single-strand conformation polymorphism (SSCP). A change of a single base pair, adenosine to cytosine transversion, was found in the promoter region of the gene, 444 nucleotides upstream of the first codon (figure). The A→C transversion creates a new MspI restriction site, which has been used for genotyping of patients by restriction-fragment length polymorphism (RFLP). The genotyping included 47 AIA patients (11 men, mean age 45·2 years, with diagnosis confirmed by aspirin provocation tests), 64 aspirin-tolerant asthmatics (ATA; 21 men, mean age 40·5), and 42 healthy individuals (18 men, mean age 38·5). Six AIA patients, but only one in the healthy group and one ATA patient, were homozygous for the less common allele (C–444). The frequency of C–444 homozygous for the less common allele (C–444). The frequency of C–444 homozygous for the less common allele was 3·89 (95% CI 1·57–8·98). Linkage disequilibrium between LTC4S alleles and AIA was significant within a wide interval of an assumed disease frequency (0·001–0·5) and penetrance (10–100%).

The promoter region of the LTC4S includes numerous