



Literature Review & Commentary

by Alan R. Gaby, MD
drgaby@earthlink.net

Topical Manuka Honey for MRSA Infection

In case reports, three hospice patients with ulcers contaminated with methicillin-resistant *Staphylococcus aureus* (MRSA) improved after receiving daily topical applications of manuka honey.

Comment: Antibiotic-resistant infections have become a major public health problem in recent years, in part as a result of widespread use of antiseptics in hospitals and antibiotics both in and out of hospitals. According to some estimates, MRSA infections are responsible for more deaths each year in the US than the AIDS virus. Manuka honey has demonstrated broad-spectrum antibacterial activity, largely because of the production of hydrogen peroxide by the enzyme glucose oxidase. Catalase removes the hydrogen peroxide and eliminates the antibacterial properties of most honeys, but manuka honey retains its antibacterial properties for reasons that are not clear. Garlic extracts have also demonstrated activity against various strains of *S. aureus in vitro*. Both of these natural substances deserve further study as treatments for MRSA, particularly since treatment with honey and garlic does not appear to lead to the emergence of resistant bacterial strains.

Chambers J. Topical manuka honey for MRSA-contaminated skin ulcers. *Palliat Med.* 2006;20:557.

Nutritional Support for Tuberculosis Patients

Four hundred seventy-one HIV-infected and 416 HIV-negative adults in Tanzania who had pulmonary tuberculosis were randomly assigned to receive, in double-blind fashion, a combination of micronutrients or placebo, beginning at the time antituberculosis medication was begun. The daily micronutrient regimen consisted of 5,000 IU of vitamin A, 20 mg of thiamine, 20 mg of riboflavin, 25 mg of vitamin B6, 100 mg of niacin, 50 μ g of vitamin B12, 500 mg of vitamin C, 200 IU of vitamin E, 0.8 mg of folic acid, and 100 μ g of selenium. Compared with placebo, active treatment reduced the risk of tuberculosis recurrence by 45% overall ($p = 0.02$) and by 63% in HIV-infected patients ($p = 0.02$). There was no significant difference in mortality rate between groups. However, in HIV-negative patients, the death rate was nonsignificantly lower by 64% in the active-treatment group than in the placebo group ($p = 0.08$). Supplementation

increased CD3+ and CD4+ cell counts and decreased the incidence of extrapulmonary tuberculosis and genital ulcers in HIV-negative patients. Micronutrient supplementation also reduced the incidence of peripheral neuropathy by 57% ($p < 0.001$), irrespective of HIV status.

Comment: Malnutrition is a serious problem among the general population in Tanzania. However, even in Western countries, both HIV infection and tuberculosis are frequently associated with poor nutritional status, which adversely affects the capacity of the immune system to fight infections. The results of this study indicate that providing even a modest amount of nutritional support to patients with tuberculosis improves the outcome of conventional therapy and possibly decreases the death rate.

Villamor E et al. A trial of the effect of micronutrient supplementation on treatment outcome, T cell counts, morbidity, and mortality in adults with pulmonary tuberculosis. *J Infect Dis.* 2008;197:1499-1505.

Vitamin D Prevents Infections

Some 5,292 elderly British individuals (mean age, 77 years) participating in a study on fracture prevention were randomly assigned to receive 800 IU per day of vitamin D, 1,000 mg per day of calcium, both supplements, or placebo for 24 to 62 months. About two-thirds of the participants responded to a questionnaire at a median of 18 months after randomization. Among the 55% of questionnaire respondents who were still taking their treatment, the incidence of infections was 20% lower in those assigned to receive vitamin D than in those assigned not to receive vitamin D ($p = 0.06$).

Comment: Vitamin D enhances immune function, and vitamin D deficiency increases the risk of developing infections. Although the results of the present study were only of borderline statistical significance, they suggest that vitamin D supplementation can prevent infections among the general population of elderly individuals. In a previous study conducted among black women in the US, the incidence of cold or influenza symptoms was significantly lower among those who received vitamin D than among those who received a placebo. A dose of 800 IU per day of vitamin D appears to be the minimum amount that improves various clinical outcomes in elderly people.

Copyright of Townsend Letter is the property of Townsend Letter Group and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.