Treating GAS to reduce transmission to a vulnerable community

Dear Editor,

Associate Professor Mark Thomas provides sensible prescribing advice in the Upfront article "Time to reduce antibiotic prescribing – NOW". However, there are some situations when it may be appropriate to prescribe antibiotics to a person at low risk of developing acute rheumatic fever to prevent them passing on a GAS infection to a vulnerable population. For example, a New Zealand European teacher with GAS pharyngitis working at a predominantly Māori low-decile primary school may be at risk of passing this infection on to students.

General Practitioner, Te Awamutu

Response from bpac^{nz} editorial team:

In the "Upfront" article in the antibiotic issue, BPJ 68 (Jun, 2015), Associate Professor Mark Thomas recommended three simple changes to antibiotic prescribing for health professionals to improve antimicrobial stewardship. The first of these was:

"Do not prescribe an antibiotic for patients with a sore throat who are not of Māori or Pacific ethnicity and not aged between 5 and 18 years."

This advice is based on the observation that acute rheumatic fever is extremely uncommon in non-Māori and non-Pacific peoples,[1] and that the majority of cases of rheumatic fever in New Zealand occur in people aged between five and 19 years. From January 2002 to December 2011, 80% of patients diagnosed with acute rheumatic fever in the Waikato DHB were Māori and 92% were aged between five and 19 years.[2] Therefore in populations at low risk of developing acute rheumatic fever, throat swabbing and antibiotic prescribing for group A streptococcal (GAS) pharyngitis is generally not recommended.[1] This is because the risk of increasing antimicrobial resistance and the possible adverse effects associated with the use of antibiotics are judged to exceed any benefits provided by the prophylaxis of rheumatic heart disease.

However, there are exceptions to every rule. GAS throat infection is highly transmissible by droplet spread.[1] Rates of transmission of GAS infection are estimated to be up to 25% to the close contacts of people with active GAS infections.[3] Therefore the New Zealand National Heart Foundation recommends considering throat swabbing and treating workers at increased risk of spreading GAS to vulnerable populations, e.g. healthcare and residential care workers, food handlers, teachers and childcare workers,[1] who present with symptoms consistent with GAS pharyngitis. If the patient is GAS positive then further consideration should be given to isolating them for 24 hours after starting antibiotics.[1] Situations where this might be appropriate are relatively uncommon, but could include the scenario described by our correspondent. In most situations, throat swabbing and antibiotic treatment in populations at low risk of acute rheumatic fever should be avoided.[1]

References

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Does tart cherry help with sleep?

Dear Editor,

I was interested to read your recent article on melatonin ("Melatonin: is it worth losing any sleep over?", BPJ 69, Aug, 2015). I have had a number of patients with sleep problems asking if they should take Tart Cherry supplements; some have been using them for their children. The promotional material regarding these products claims that because they contain a natural form of melatonin, they can help with sleep and are safe to be used in children. Is there any good evidence that these products are effective and safe?

General Practitioner, Dunedin

Response from bpac^{nz} editorial team:

It is claimed that cherries and cherry extracts, particularly tart cherry, are associated with several health benefits, such as improving sleep, reducing muscle recovery time after exercise and decreasing inflammation.[1] Cherries are generally divided into sweet or tart varieties. There are two main types

of tart cherries – morello and amarelle. Montmorency tart cherries, which are a variety of amarelle, are the most common constituent of "medicinal" cherry products. Tart cherries contain various phytochemicals, including anthocyanins, which are reported to have cellular oxidative stress protection properties.[1] They also contain anti-inflammatory cytokines and melatonin, which if absorbed, may have sleep regulation properties.[1]

To date, there has been limited clinical research investigating the effect of cherry extracts on sleep. Notable small studies include:

- A randomised, double-blind, placebo-controlled, crossover study investigated twenty healthy adults who consumed tart cherry concentrate or placebo within 30 minutes of waking and 30 minutes before their evening meal, for seven days. Based on sleep diary data, participants had a significant increase in total sleep time when taking tart cherry extract, and non-significant reductions in time taken to fall asleep (sleep latency - approximately five minutes) and wake after sleep onset (approximately one minute).[2]
- Another randomised, double-blind, placebo-controlled, crossover study investigated the effect of tart cherry extract in 15 older adults with chronic insomnia. Participants took treatment or placebo for two weeks, with a two week intervening washout period. Assessment was based on sleep diary data and an insomnia severity index. Tart cherry was associated with a significant reduction in insomnia severity (minutes awake after sleep onset), but no significant improvements in sleep latency, total sleep time or sleep efficiency compared to placebo. The authors noted that the effects of tart cherry were equal to or exceeded those found with valerian and equal to some but not all studies of melatonin. The effects were, however, considerably less than for evidence-based treatments for insomnia such as cognitive behavioural therapy.[3]
- In a randomised, double-blind, placebo-controlled, crossover study investigating Jerte Valley (Spain) sweet cherry extract, 30 adults took the extract or placebo over seven 72 hour periods. When the cherry extract was taken, participants had improved nocturnal rest measured by sleep efficiency, number of awakenings, total nocturnal activity, sleep latency, assumed sleep, actual sleep and immobility. Older adults had greater improvements in sleep.[4]

In each of the studies, participants taking the cherry extracts were found to have detectable levels of melatonin in their urine; melatonin was not detected after taking placebo. In the tart cherry studies, however, the amount of melatonin taken was estimated to be 0.08 mg – less than the lowest doses of exogenous melatonin found to have an impact on sleep (0.3 mg).[1] The short half-life of melatonin (less than one hour) suggests that the improvements seen in wake after sleep onset may also be due to other mechanisms or factors.[1]

None of the studies included discussion of adverse effects associated with the cherry extracts. In addition, there have been no studies involving children, therefore the efficacy and safety of cherry extract in this group is unknown.

A pragmatic approach if a patient or parent wishes to trial the use of a tart cherry product (available in New Zealand as juice, capsules, lozenges and sachets), is to suggest that the supplement is taken daily for one to two weeks while monitoring sleep quality. The supplement should be ceased if sleep parameters do not improve within this time, or if the patient believes they are experiencing adverse effects.

References

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3. Pigeon W, Carr M, Gorman C, Perlis M. Effects of a tart cherry juice beverage on the sleep of older adults with insomnia: a pilot study. J Med Food 2010;13(3):579–83.
4. Garrido M, Gonzalez-Gomez D, Lozano M, et al. A Jerte Valley cherry product provides beneficial effects on sleep quality. Influence on aging. J Nutr Health Aging 2013;17(6):553-60.

We value your feedback. Write to us at: Correspondence, PO Box 6032, Dunedin or email: editor@bpac.org.nz