Is sunlight an effective treatment for infants with jaundice?

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Clinical question

"*Is sunlight an effective treatment for jaundice in term infants?*" A women's health educator at Southern Health wanted to know if there was any evidence that sunlight helps to reduce physiological jaundice in healthy term infants.

Search question

The formulated search question followed a standard patients/interventions/comparisons/outcomes (PICO) format. Patients were term newborn infants with physiological jaundice (see Box), and the intervention was exposure to sunlight. Clinical outcomes of interest were primarily a reduction of jaundice. A randomised controlled trial comparing sunlight exposure to no treatment or another treatment would be the most appropriate study design to answer this clinical question.

Search

The search terms "neonatal jaundice", "hyperbilirubin(a)emia" or "icterus" were combined with the treatment search terms "sunlight", "heliotherapy" or "phototherapy". We searched the following electronic databases: the *Cochrane Library*, *Best Evidence*, *MEDLINE*, *CINAHL* (Cumulative Index to Nursing and Allied Health Literature), *Current Contents* and *Biological Abstracts*. *MEDLINE* indexes articles published since 1966, but a widely cited and historically important article that provided the first English-language report of an association between light and a reduction in neonatal jaundice was published in 1958.[2] In light of this, we hand-searched the print versions of *Index Medicus* and *Science Citation Index* from 1958 to 1966. We also searched the websites of a number of organisations: Bandolier, University of Michigan Department of Pediatrics (Evidence-Based Pediatrics), US National Guidelines Clearinghouse, National Health and Medical Research Council of Australia (Publications Catalogue), Scottish Intercollegiate Guidelines Network, and UK National Health Service (Institute of Health Sciences Guideline Project).

Summary of findings

Our extensive search identified only the one, original study that examined sunlight exposure as a treatment for neonatal jaundice.[2] This was a case series reporting the effect of sunlight in jaundiced preterm, rather than term, infants. The same authors then reported a case series of artificial light therapy for jaundiced preterm infants, which stimulated the subsequent considerable volume of research articles on the effectiveness of phototherapy for neonatal jaundice in both term and preterm infants. Current recommendations for artificial phototherapy are summarised elsewhere.[3] We found no controlled trials comparing sunlight against either no treatment or artificial light treatment for jaundice. The use of sunlight appears to have resulted from anecdotal reports of its effectiveness[4] rather than from rigorous medical evidence. And if the effectiveness of sunlight exposure for jaundice is unknown, so too is the incidence of potential risks to the neonate — for example, sunburn or photosensitivity.

Definition of physiological jaundice[1]

Physiological jaundice is a diagnosis of exclusion. It should not fill any of the following criteria:

- Clinical jaundice in the first 24 hours of life;
- Total serum bilirubin level > 300 μmol/L in a term infant or > 255 μmol/L in a preterm infant;
- Direct reacting serum bilirubin level > 30 μmol/L, persisting more than 10 days in a term infant or 14 days in a preterm infant.

Outcome

There is insufficient evidence to support exposure to sunlight for the treatment of jaundice. The persistence of this practice 40 years after publication of a report on a single case series raises questions about the influence of evidence on the beliefs of professional healthcare workers. Based on our search results, a recommendation against using sunlight exposure to treat jaundice was distributed to Southern Health staff and used in an education program for midwives.

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(Received 3 Oct 2002, accepted 8 Dec 2002) ❑