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Honey as a topical treatment for wounds

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ABSTRACT

Background

Honey is a viscous, supersaturated sugar solution derived from nectar gathered and modified by the honeybee, *Apis mellifera*. Honey has been used since ancient times as a remedy in wound care. Evidence from animal studies and some trials has suggested that honey may accelerate wound healing.

Objectives

The objective of this review was to assess the effects of honey compared with alternative wound dressings and topical treatments on the of healing of acute (e.g. burns, lacerations) and/or chronic (e.g. venous ulcers) wounds.

Search methods

For this update of the review we searched the Cochrane Wounds Group Specialised Register (searched 15 October 2014); The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2014, Issue 9); Ovid MEDLINE (1946 to October Week 1 2014); Ovid MEDLINE (In-Process & Other Non-Indexed Citations 13 October 2014); Ovid EMBASE (1974 to 13 October 2014); and EBSCO CINAHL (1982 to 15 October 2014).

Selection criteria

Randomised and quasi-randomised trials that evaluated honey as a treatment for any sort of acute or chronic wound were sought. There was no restriction in terms of source, date of publication or language. Wound healing was the primary endpoint.

Data collection and analysis

Data from eligible trials were extracted and summarised by one review author, using a data extraction sheet, and independently verified by a second review author. All data have been subsequently checked by two more authors.

Main results

We identified 26 eligible trials (total of 3011 participants). Three trials evaluated the effects of honey in minor acute wounds, 11 trials evaluated honey in burns, 10 trials recruited people with different chronic wounds including two in people with venous leg ulcers, two trials in people with diabetic foot ulcers and single trials in infected post-operative wounds, pressure injuries, cutaneous Leishmaniasis and Fournier's gangrene. Two trials recruited a mixed population of people with acute and chronic wounds. The quality of the evidence

varied between different comparisons and outcomes. We mainly downgraded the quality of evidence for risk of bias, imprecision and, in a few cases, inconsistency.

There is high quality evidence (2 trials, n=992) that honey dressings heal partial thickness burns more quickly than conventional dressings (WMD -4.68 days, 95%CI -5.09 to -4.28) but it is unclear if there is a difference in rates of adverse events (very low quality evidence) or infection (low quality evidence).

There is very low quality evidence (4 trials, n=332) that burns treated with honey heal more quickly than those treated with silver sulfadiazine (SSD) (WMD -5.12 days, 95%CI -9.51 to -0.73) and high quality evidence from 6 trials (n=462) that there is no difference in overall risk of healing within 6 weeks for honey compared with SSD (RR 1.00, 95% CI 0.98 to 1.02) but a reduction in the overall risk of adverse events with honey relative to SSD. There is low quality evidence (1 trial, n=50) that early excision and grafting heals partial and full thickness burns more quickly than honey followed by grafting as necessary (WMD 13.6 days, 95%CI 9.82 to 17.38).

There is low quality evidence (2 trials, different comparators, n=140) that honey heals a mixed population of acute and chronic wounds more quickly than SSD or sugar dressings.

Honey healed infected post-operative wounds more quickly than antiseptic washes followed by gauze and was associated with fewer adverse events (1 trial, n=50, moderate quality evidence, RR of healing 1.69, 95%CI 1.10 to 2.61); healed pressure ulcers more quickly than saline soaks (1 trial, n= 40, very low quality evidence, RR 1.41, 95%CI 1.05 to 1.90), and healed Fournier's gangrene more quickly than Eusol soaks (1 trial, n=30, very low quality evidence, WMD -8.00 days, 95%CI -6.08 to -9.92 days).

The effects of honey relative to comparators are unclear for: venous leg ulcers (2 trials, n= 476, low quality evidence); minor acute wounds (3 trials, n=213, very low quality evidence); diabetic foot ulcers (2 trials, n=93, low quality evidence); Leishmaniasis (1 trial, n=100, low quality evidence); mixed chronic wounds (2 trials, n=150, low quality evidence).

Authors' conclusions

It is difficult to draw overall conclusions regarding the effects of honey as a topical treatment for wounds due to the heterogeneous nature of the patient populations and comparators studied and the mostly low quality of the evidence. The quality of the evidence was mainly downgraded for risk of bias and imprecision. Honey appears to heal partial thickness burns more quickly than conventional treatment (which included polyurethane film, paraffin gauze, soframycin-impregnated gauze, sterile linen and leaving the burns exposed) and infected post-operative wounds more quickly than antiseptics and gauze. Beyond these comparisons any evidence for differences in the effects of honey and comparators is of low or very low quality and does not form a robust basis for decision making.

PLAIN LANGUAGE SUMMARY

Honey as a topical treatment for acute and chronic wounds

We reviewed the evidence about the effects of applying honey on the healing of any kind of wound. We found 26 studies involving 3011 people with many different kinds of wounds. Honey was compared with many different treatments in the included studies.

The differences in wound types and comparators make it impossible to draw overall conclusions about the effects of honey on wound healing. The evidence for most comparisons is low or very low quality. This was largely because we thought that problems with the design of some of the studies made their results unreliable and for many outcomes there was only a small amount of information available. In some cases the results of the studies varied considerably.

There is high quality evidence that honey heals partial thickness burns around 4 to 5 days more quickly than conventional dressings. There is moderate quality evidence that honey is more effective than antiseptic followed by gauze for healing wounds infected after surgical operations.

It is not clear if honey is better or worse than other treatments for burns, mixed acute and chronic wounds, pressure ulcers, Fournier's gangrene, venous leg ulcers, minor acute wounds, diabetic foot ulcers and Leishmaniasis as most of the evidence that exists is of low or very low quality.

This evidence is current up to October 2014.