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[Intervention Review]

Aspirin for acute treatment of episodic tension-type headache in adults

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ABSTRACT

Background

Tension-type headache (TTH) affects about 1 person in 5 worldwide. It is divided into infrequent episodic TTH (fewer than one headache per month), frequent episodic TTH (two to 14 headache days per month), and chronic TTH (15 headache days per month or more). Aspirin is one of a number of analgesics suggested for acute treatment of episodic TTH.

Objectives

To assess the efficacy and safety of aspirin for acute treatment of episodic tension-type headache (TTH) in adults compared with placebo or any active comparator.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, and the Oxford Pain Relief Database from inception to September 2016, and also reference lists of relevant published studies and reviews. We sought unpublished studies by asking personal contacts and searching online clinical trial registers and manufacturers' websites.

Selection criteria

We included randomised, double-blind, placebo-controlled studies (parallel-group or cross-over) using oral aspirin for symptomatic relief of an acute episode of TTH. Studies had to be prospective, with participants aged 18 years or over, and include at least 10 participants per treatment arm.

Data collection and analysis

Two review authors independently assessed studies for inclusion and extracted data. For various outcomes (predominantly those recommended by the International Headache Society (IHS)), we calculated the risk ratio (RR) and number needed to treat for one additional beneficial outcome (NNT), one additional harmful outcome (NNH), or to prevent one event (NNTp) for oral aspirin compared to placebo or an active intervention.

We assessed the evidence using GRADE and created a 'Summary of findings' table.

Main results

We included five studies enrolling adults with frequent episodic TTH; 1812 participants took medication, of which 767 were included in comparisons of aspirin 1000 mg with placebo, and 405 in comparisons of aspirin 500 mg or 650 mg with placebo. Not all of these participants provided data for outcomes of interest in this review. Four studies specified using IHS diagnostic criteria; one predated commonly recognised criteria, but described comparable characteristics and excluded migraine. All participants treated headaches of at least moderate pain intensity. Trusted evidence. Informed decisions. Better health.

None of the included studies were at low risk of bias across all domains considered, although for most studies and domains this was likely to be due to inadequate reporting rather than poor methods. We judged one study to be at high risk of bias due to small size.

There were no data for aspirin at any dose for the IHS preferred outcome of being pain free at two hours, or for being pain free at any other time, and only one study provided data equivalent to having no or mild pain at two hours (very low quality evidence). Use of rescue medication was lower with aspirin 1000 mg than with placebo (2 studies, 397 participants); 14% of participants used rescue medication with aspirin 1000 mg compared with 31% with placebo (NNTp 6.0, 95% confidence interval (Cl) 4.1 to 12) (low quality evidence). Two studies (397 participants) reported a Patient Global Evaluation at the end of the study; we combined the top two categories for both studies to determine the number of participants who were 'satisfied' with treatment. Aspirin 1000 mg produced more satisfied participants (55%) than did placebo (37%) (NNT 5.7, 95% Cl 3.7 to 12) (very low quality evidence).

Adverse events were not different between aspirin 1000 mg and placebo (RR 1.1, 95% CI 0.8 to 1.5), or aspirin 500 mg or 650 mg and placebo (RR 1.3, 95% CI 0.8 to 2.0) (low quality evidence). Studies reported no serious adverse events.

The quality of the evidence using GRADE comparing aspirin doses between 500 mg and 1000 mg with placebo was low or very low. Evidence was downgraded because of the small number of studies and events, and because the most important measures of efficacy were not reported.

There were insufficient data to compare aspirin with any active comparator (paracetamol alone, paracetamol plus codeine, peppermint oil, or metamizole) at any of the doses tested.

Authors' conclusions

A single dose of aspirin between 500 mg and 1000 mg provided some benefit in terms of less frequent use of rescue medication and more participants satisfied with treatment compared with placebo in adults with frequent episodic TTH who have an acute headache of moderate or severe intensity. There was no difference between a single dose of aspirin and placebo for the number of people experiencing adverse events. The amount and quality of the evidence was very limited and should be interpreted with caution.

PLAIN LANGUAGE SUMMARY

Oral aspirin for treatment of acute episodic tension-type headache in adults

Bottom line

This review found only very low quality evidence that people with 2 to 14 tension-type headaches a month get good pain relief from taking aspirin 1000 mg or lower doses. There are questions about how studies of this type of headache are conducted. These questions involve the type of people chosen for the studies, and the types of outcomes reported. This limits the usefulness of the results, especially for people who just have an occasional headache.

Background

People with frequent episodic tension-type headache have between 2 and 14 headaches every month. Tension-type headache stops people concentrating and working properly, and results in much disability. When headaches do occur, they get better over time, even without treatment. Aspirin is a commonly used and widely available painkiller, available without prescription (over the counter). The usual dose is 300 mg to 650 mg taken by mouth.

Study characteristics

In September 2016, we searched the medical literature and found five studies involving 1812 participants looking at aspirin for frequent episodic tension-type headache. About 1668 participants were involved in comparisons between aspirin at doses between 500 mg and 1000 mg and placebo (a dummy tablet). The International Headache Society recommends the outcome of being pain free two hours after taking a medicine, but other outcomes are also suggested. No studies reported pain free at two hours, or other recognised outcomes, so there was limited information to analyse for outcomes about how well aspirin works.

Key results

None of the studies reported on participants being pain free at two hours, and only one study reported an outcome we judged equivalent to being pain free or having only mild pain at two hours. For aspirin 1000 mg, about 10 participants in 100 used additional painkillers, compared with 30 in 100 with placebo (very low quality evidence). At the end of the study 55 in 100 participants were 'satisfied' with treatment compared with 37 in 100 with placebo (very low quality evidence). About 15 in 100 people taking aspirin 1000 mg reported having a side effect after one dose, which was the same as with placebo (low quality evidence).

Quality of the evidence

The quality of the evidence was low or very low for the comparisons between aspirin and placebo. Low and very low quality evidence means that we are very uncertain about the results.

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