The Effects of a Complex Homeopathic Medicine Compared With Acetaminophen in the Symptomatic Treatment of Acute Febrile Infections in Children: An Observational Study

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Context: Children frequently suffer infections accompanied by fever, which is commonly treated with acetaminophen (paracetamol), a use not devoid of risk.

Objective: The effect of a complex homeopathic medicine (Viburcol, Heel Belgium, Gent, Belgium) was compared with that of acetaminophen in children with infectious fever.

Design: Non-randomized observational study.

Setting: Thirty-eight Belgian centers practicing homeopathy and conventional medicine.

Patients: Children <12 years old.

Interventions: Viburcol (drops) or acetaminophen (pills, capsules, or liquid form) for a maximum of 2 weeks.

Main Outcome Measures: Fever, cramps, distress, disturbed sleep, crying, and difficulties with eating or drinking. Symptoms were graded by the practitioner on a scale from 0 to 3. Severity of infection was evaluated on a scale from 0 to 4. Data were captured on body temperature, subjective impression of health status, time to first improvement of symptoms, and global evaluation of treatment effects. Tolerability and compliance were monitored.

Results: Both treatment groups improved during the treatment period. Body temperature was reduced by 1.7°C ± 0.7°C with Viburcol and by 1.9°C ± 0.9°C with acetaminophen; fever score (scale from 0 to 3) from 1.7 ± 0.6 to 0.1 ± 0.2 with Viburcol and from 1.9 ± 0.7 to 0.2 ± 0.5 with acetaminophen (all values mean ±SD). The overall severity of infection (scale from 0 to 4) decreased from 2.0 ± 0.5 to 0.0 ± 0.2 with Viburcol and from 2.2 ± 0.7 to 0.2 ± 0.6 with acetaminophen. There were no statistically significant differences between treatment groups in time to symptomatic improvement. Viburcol was noninferior to acetaminophen on all variables evaluated. Both treatments were very well tolerated, but the Viburcol group had a significantly greater number of patients with the highest tolerability score.

Conclusions: In this patient population, Viburcol was an effective alternative to acetaminophen treatment and significantly better tolerated.

Key words: cramps, fever, noninferiority, nonrandomized, NSAID

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INTRODUCTION

Children frequently suffer infections accompanied by fever, which is treated by parents, visiting practitioners, or admittance to a hospital. Among the most common antipyretics are acetaminophen (paracetamol), which is currently recommended by the World Health Organization for children with a temperature <39°C[1] and which is used as an over-the-counter drug in the treatment of a large number of infections of varying etiology and severity. However, the use of acetaminophen is not devoid of risk, particularly risk of hepatic damage from overdoses.[2,3] The window between a pharmacologically active dose and a hepatotoxic dose for acetaminophen is small and may be reduced further when multiple doses are administered, in which case, the harmful doses may be only just greater than the recommended maximum dose (90 mg/kg/day).[4] Because the efficacy of drugs such as acetaminophen has not always been found to compensate for the risk of treatment,[5] many parents and practitioners see complementary and alternative medicine as an appealing alternative to conventional therapies for the symptomatic treatment of minor illnesses. Such therapies are becoming increasingly popular in many parts of the world for several reasons. Surveys of treatment patterns show patients to turn to alternative treatments because of greater perceived safety and tolerability of medications, a closer patient-practitioner relationship, and greater patient influence over treatment decisions.[6] However, complementary and alternative medicine is not a recent phenomenon, and, in certain European countries such as Germany, homeopathic remedies have been prescribed since the 1930s.[6]

Viburcol (Heel Belgium, Gent, Belgium) is a homeopathic preparation based on highly diluted plant extracts (listed in Table 1). Viburcol has long been used for the treatment of symptoms associated with mild viral infections such as the common cold. As with many homeopathic therapies, Viburcol has a long record of use and an attractive safety profile,[7-9] but, as with most alternative medications, there is a need for

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Table 1. Constituents of Viburcol

Extracts, dilution	Content pro vial	Common use
Camomilla (Chamomile), D4	25.0 mg	Respiratory infections, gastric disorders
Belladonna (Deadly nightshade), D6	11.0 mg	Glandular, respiratory, gastric or urinary infections
Dulcamara (Woody nightshade); D6	25.0 mg	Fever, common cold
Plantago major (Rat-tail plantain), D4	25.0 mg	Headaches, gastric disorders
Pulsatilla pratensis (Pasque flower), D6	50.0 mg	Glandular, respiratory, gastric, or urinary infections; headaches; sleeplessness
Other substances		
Calcium carbonate, D8	75.0 mg	

adequate assessments of efficacy and tolerability in specifically designed studies.

The aim of the present investigation was to compare the effects of oral administration of the homeopathic preparation Viburcol (given as drops) with those of common acetaminophen therapy, administered as tablets, syrup or capsules, on the symptomatic treatment of febrile infections in children <12 years of age. The outcomes were analyzed to demonstrate the noninferiority of Viburcol on the effect on individual variables as well as on overall treatment effect.

Studies in complementary medicine are associated with specific difficulties that frequently make them less amenable than studies in conventional medicine to the randomized, double-blind study design. Homeopathic remedies are prescribed to a very wide range of patients, and a randomized trial design would run the risk of excluding patients not meeting certain predefined criteria. To reduce this risk and to reflect the broad spectrum of individuals treated in clinical practice, we chose a nonrandomized, observational study design. It is widely recognized that randomized and observational studies are complementary, not opposed, research methodologies.[10]

METHODS

This nonrandomized, prospective, observational cohort study included children 11 years of age or younger with acute infections accompanied by fever in 38 centers in Belgium. Each center was instructed to enroll 6 patients, 3 into the Viburcol group and 3 into the acetaminophen group. The choice of treatment in each individual patient case was left to the practitioner's discretion. Children were excluded if they were older than 11 years of age, if they were without symptoms at the time of initiation of treatment, and if they were enrolled at a center that failed to recruit patients to both treatment groups. Both therapies were administered orally. Viburcol was given as drops (from single-use plastic vials) at dosages decided in each individual case, depending on the age of the patient. Children under 1 year of age received 1 vial (3 × 5 drops) daily, children up to 5 years of age received 1 to 2 vials, and older children 2 vials daily. Acetaminophen was administered as pills, capsules, or liquid form. Treatment was to continue for a maximum of 2 weeks.

All patients and their caretakers were informed about the background and purpose of the study, which was conducted in full compliance with the principles of the Declaration of Helsinki and with the regulations for the conductance of observational studies (Bundesanzeiger Federal Gazette No 299, December 1998).

Patients were examined at first visit, and demographic data were collected together with data on temperature, symptoms, severity, duration of illness at the time of presentation, possible previous treatments, and overall status at the time of presentation. The final visit was to take place within 2 weeks of treatment initiation. At this visit, treatment effects were evaluated, and changes to treatment regimen were documented together with the reasons for possible changes, state of the patient, compliance, tolerability, and occurrence of any adverse events. Discontinuation of therapy before the final visit was possible on grounds of adverse events, unsatisfactory treatment effects, or the disappearance of further symptoms.

Treatment efficacy was evaluated by the practitioner on the following variables: fever, cramps, distress, disturbed sleep, crying, and difficulties with eating or drinking. The expression of symptoms was graded on severity on a scale from 0 to 3, of which 0 indicated no symptoms, 1 indicated mild symptoms, 2 indicated moderate symptoms, and 3 indicated severe symptoms. Severity of infection was evaluated on a 5-point scale from 0 to 4. In addition, body temperature was recorded at baseline and at the final visit.

Furthermore, subjective impression of health status was assessed by the child caretakers as 1, well; 2, moderately well; 3, unwell; and 4, very unwell. Time to first improvement of symptoms was recorded, and a global evaluation of treatment effect was performed by the practitioner in a dialogue with the respective child caretaker. Five degrees of effect were distinguished: "excellent," "good," "moderate," "none," and a worsening of symptoms, at which, "excellent" indicated a complete regression of symptoms.

Tolerability was graded on a 4-point scale, from "excellent" (indicating a complete regression of symptoms), "good," and "moderate" to "poor." Compliance (rated as child caretaker's compliance) was evaluated on a similar 4-point scale. Patients were monitored for adverse events, which were documented descriptively.