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Acupuncture in Children

Pédiatrie générale : évaluation de l'acupuncture

1. Systematic Reviews and Meta-Analysis

1.1. Raith 2013 (Preterm and Term Infants)

Raith W, Urlesberger B, Schmölzer GM. Efficacy and safety of acupuncture in preterm and term infants. Evid Based Complement Alternat Med. 2013;:739414. [170493].

The aim of the paper was to review the literature about safety and efficiency of acupuncture therapy in term and preterm infants. We searched Medline, EMBASE, and Cochrane Central Register of Controlled Trials using a predefined algorithm, reviewed abstracts from the Pediatric Academic Society annual meetings (2000-2012), and performed a manual search of references in narrative and systematic reviews. A total of 26 studies identified met our search criteria. Only 6 of these studies met our inclusion criteria; however, two studies had to be excluded because the manuscripts were published in Chinese. Hence, only four studies were included in our analysis. Three of the four studies evaluated the effects of acupuncture on infantile colic, and one assessed pain reduction during minor painful procedures in preterm babies. The limited data available suggests that acupuncture could be a safe nonpharmacologic treatment option for pain reduction in term and preterm infants and could also be a non-pharmacologic treatment option to treat infantile colic. Currently acupuncture in infants should be limited to clinical trials and studies evaluating short- and long-term effects and should be performed only by practitioners with adequate training and experience in neonatal/pediatric acupuncture.

1.2. Snyder 2012 ~

Snyder J, Brown P. Complementary and alternative medicine in children: an analysis of the recent literature. Curr Opin Pediatr. 2012;24(4):539-46. [166556].

PURPOSE OF REVIEW: Although many publications have documented the use of complementary and alternative medicine (CAM) in children and adolescents, most have lacked the scientific rigor to establish clear benefits over so-called conventional medicine. We reviewed the literature published in the past year to identify the types of CAM most often studied in children, the variety of conditions to which these modalities are applied, and the methodologies used in the articles exploring the most prevalent CAM modalities. RECENT FINDINGS: We identified 111 published articles on CAM use in children in 2011. The most common modalities were herbal/dietary supplements, **acupuncture**, massage, chiropractic, and homeopathy. The most commonly studied conditions were pain, headache, attention deficit hyperactivity disorder (ADHD), asthma, and colic. Although a majority of the articles consisted of reviews, case reports, and other nonhypothesis-driven methodologies, we did find that several were randomized controlled trials, meta-analyses, or systematic reviews. These methodologies, however, rarely accounted for the majority of publications on a particular therapy or condition. SUMMARY: The use of CAM in children continues to occupy a niche area of interest for many providers and families, but only a minority of articles published in the past year utilized methods of sufficient rigor to provide a useful comparison to more conventional therapies.

1.3. Libonate 2008 ~

Libonate J, Evans S, Tsao JC. Efficacy of acupuncture for health conditions in children: a review. Scientificworld Journal. 2008;8:670-82. [150013].

Acupuncture has been used to treat a variety of childhood problems; however, the efficacy and safety of pediatric acupuncture remains unclear. This article reviews the existing empirical literature relating to the use of acupuncture for medical conditions in children. A systematic search of the literature revealed that acupuncture has been used to treat five main conditions in children, including pain, nocturnal enuresis, postoperative nausea/vomiting, laryngospasm/stridor, and neurological disorders. Despite a number of methodological issues, including limited sample sizes, lack of randomization, and inappropriate control groups, it is concluded that acupuncture represents a promising intervention for a variety of pediatric health conditions. To further address the safety, effectiveness, and acceptability of acupuncture in children, large-scale randomized controlled trials are needed.

1.4. Jindal 2008 ~

Jindal V, Ge A, Mansky PJ. Safety and efficacy of acupuncture in children: a review of the evidence. J Pediatr Hematol Oncol. 2008;30(6):431-42. [149108].

Acupuncture has been used therapeutically in China for thousands of years and is growing in prominence in Europe and the United States. In a recent review of complementary and alternative medicine use in the US population, an estimated 2.1 million people or 1.1% of the population sought acupuncture care during the past 12 months. Four percent of the US population used acupuncture at any time in their lives. We reviewed 31 different published journal articles, including 23 randomized controlled clinical trials and 8 meta-analysis/systematic reviews. We found evidence of some efficacy and low risk associated with acupuncture in pediatrics. From all the conditions we reviewed, the most extensive research has looked into acupuncture's role in managing postoperative and chemotherapy-induced nausea/vomiting. Postoperatively, there is far more evidence of acupuncture's efficacy for pediatrics than for children treated with chemotherapy. Acupuncture seems to be most effective in preventing postoperative induced nausea in children. For adults, research shows that acupuncture can inhibit chemotherapy-related acute vomiting, but conclusions about its effects in pediatrics cannot be made on the basis of the available published clinical trials data to date. Besides nausea and vomiting, research conducted in pain has yielded the most convincing results on acupuncture efficacy. Musculoskeletal and cancer-related pain commonly affects children and adults, but unfortunately, mostly adult studies have been conducted thus far. Because the manifestations of pain can be different in children than in adults, data cannot be extrapolated from adult research. Systematic reviews have shown that existing data often lack adequate control groups and sample sizes. Vas et al, Alimi et al, and Mehling et al demonstrated some relief for adults treated with acupuncture but we could not find any well-conducted randomized controlled studies that looked at pediatrics and acupuncture exclusively. Pain is often unresolved from drug therapy, thus there is a need for more studies in this setting. For seasonal allergic rhinitis, we reviewed studies conducted by Ng et al and Xue et al in children and adults, respectively. Both populations showed some relief of symptoms through acupuncture, but questions remain about treatment logistics. Additionally, there are limited indications that acupuncture may help cure children afflicted with nocturnal enuresis. Systematic reviews show that current published trials have suffered from low trial quality, including small sample sizes. Other areas of pediatric afflictions we reviewed that suffer from lack of research include asthma, other neurologic conditions, gastrointestinal disorders, and addiction. Acupuncture has become a dominant complementary and alternative modality in clinical practice today, but its associated risk has been questioned. The National Institutes of Health Consensus Statement states “one of the advantages of acupuncture is that the incidence of adverse effects is substantially lower than that of many drugs or other accepted procedures for the same conditions.” A review of serious adverse events by White et al found the risk of a major complication occurring to have an incidence between 1:10,000 and 1:100,000, which is considered “very low.” Another study found that the risk of a serious adverse event occurring from acupuncture therapy is the same as taking penicillin. The safety of acupuncture is a serious concern, particularly in pediatrics. Because acupuncture's mechanism is not known, the use of needles in children becomes questionable. For example, acupoints on the vertex of infants should not be needled when the fontanel is not closed. It is also advisable to apply few needles or

delay treatment to the children who have overeaten, are overfatigued, or are very weak. Through our review of pediatric adverse events, we found a 1.55 risk of adverse events occurring in 100 treatments of acupuncture that coincides with the low risk detailed in the studies mentioned previously. The actual risk to an individual patient is hard to determine because certain patients, such as an immunosuppressed patient, can be predisposed to an increased risk, acupuncturist's qualifications differ, and practices vary in certain parts of the world. Nevertheless, it seems acupuncture is a safe complementary/alternative medicine modality for pediatric patients on the basis of the data we reviewed.

2. Overviews of Systematic Reviews

2.1. Yang 2015

Yang C, Hao Z, Zhang LL, Guo Q. Efficacy and safety of acupuncture in children: an overview of systematic reviews. Pediatr Res. 2015;78(2):112-9. [186613].

In recent years, acupuncture has increasingly being integrated into pediatric health care. It was used on ~150,000 children (0.2%). We aim to update the evidence for the efficacy and safety of acupuncture for children and evaluate the methodological qualities of these studies to improve future research in this area. We included 24 systematic reviews, comprising 142 randomized controlled trials (RCTs) with 12,787 participants. Only 25% (6/24) reviews were considered to be high quality (10.00 ± 0.63). High-quality systematic reviews and Cochrane systematic reviews tend to yield neutral or negative results (P = 0.052, 0.009 respectively). **The efficacy of acupuncture for five diseases (Cerebral Palsy (CP), nocturnal enuresis, tic disorders, amblyopia, and pain reduction) is promising.** It was unclear for hypoxic ischemic encephalopathy, attention deficit hyperactivity disorder, mumps, autism spectrum disorder (ASD), asthma, nausea/vomiting, and myopia. Acupuncture is not effective for epilepsy. Only six reviews reported adverse events (Aes) and no fatal side effects were reported. The efficacy of acupuncture for some diseases is promising and there have been no fatal side effects reported. Further high-quality studies are justified, with five diseases in particular as research priorities.

2.2. Hunt 2011

Hunt K, Ernst E. The evidence-base for complementary medicine in children: a critical overview of systematic reviews. Arch Dis Child. 2011;96(8):769-76. [169013].

Background	The use of complementary and alternative medicine (CAM) in paediatric populations is common yet, to date, there has been no synthesis of the evidence of its effectiveness in that population. This overview of systematic review evaluates the evidence for or against the effectiveness of CAM for any childhood condition.
Methods	Medline, AMED and Cochrane were searched from inception until September 2009. Reference lists of retrieved articles were hand-searched. Experts in the field of CAM were contacted. No language restrictions were applied.
Results	17 systematic reviews were included in this overview, covering acupuncture, chiropractic, herbal medicine, homeopathy, hypnotherapy, massage and yoga. Results were unconvincing for most conditions although there is some evidence to suggest that acupuncture may be effective for postoperative nausea and vomiting, and that hypnotherapy may be effective in reducing procedure-related pain. Most of the reviews failed to mention the incidence of adverse effects of CAMs.

Conclusions	Although there is some encouraging evidence for hypnosis, herbal medicine and acupuncture, there is insufficient evidence to suggest that other CAMs are effective for the treatment of childhood conditions. Many of the systematic reviews included in this overview were of low quality, as were the randomised clinical trials within those reviews, further reducing the weight of that evidence. Future research in CAM for children should conform to the reporting standards outlined in the CONSORT and PRISMA guidelines.