INTEGR MED RES XXX (2018) XXX–XXX

Available online at www.sciencedirect.com

Integrative Medicine Research

journal homepage: www.imr-journal.com

Review Article

Clinical effects of acupressure on *nakchim*: A systematic review

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ARTICLE INFO

Article history:
Received 26 October 2017
Received in revised form
25 December 2017
Accepted 11 January 2018
Available online xxx

Keywords:
Acupressure
Neck pain
Oriental medicine

ABSTRACT

We aimed to summarize and critically evaluate the evidence regarding the efficacy and safety of acupressure on *nakchim*. We searched eight databases for studies published up to August 29, 2017. Clinical studies evaluating the efficacy of acupressure on *nakchim* were included. The acupressure methods of included studies were divided into proximal acupressure performed on acupuncture points located in neck and shoulder, and distal acupressure performed on acupuncture points located in other areas. Overall clinical effective rate (CER) and immediately cured rate (ICR), which means rate of the symptom totally resolved after one treatment session, were calculated as mean percentage with 95% confidence interval. All included studies were assessed for methodological quality. Two case studies and 13 case series with 1037 participants were included, and 17 types of proximal acupuncture points and 14 types of distal acupuncture points were used. The most commonly used proximal and distal acupuncture points were GB20 and GB39, respectively. The CER in one study using both proximal and distal acupressure was 100%. The CER and ICR in studies using only proximal acupressure was 95.65% and 71.61%, respectively. The CER and ICR in studies using only distal acupressure was 99.37% and 69.08%, respectively. Eight studies performed simple acupressure technique using one acupuncture point, of which SI11, GB39, BL57, and TE3 were used. None of the studies reported adverse events. This review suggests that acupressure may be effective on *nakchim*. However, it is not conclusive due to low methodological quality and low evidence level of included studies.

1. Introduction

In East Asian traditional medicine (EATM), *nakchim* (落 枕) usually refers to a kind of cervical pain accompanied by the stiffness of the muscles around the neck. The range of neck movement is limited, and pain occurs after sleeping. The causes of this condition are wrong sleeping posture, neck muscle abnormality, and wind-cold assailing.[1]

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https://doi.org/10.1016/j.imr.2018.01.002

Please cite this article in press as: Kwon C-Y, Lee B. Clinical effects of acupressure on *nakchim*: A systematic review. *Integr Med Res* (2018), https://doi.org/10.1016/j.imr.2018.01.002

This term was translated into "stiff neck" according to the World Health Organization's (WHO) International Standard Terminologies on Traditional Medicine and was defined as "*acute inflammation or sprain of the soft tissue of the neck*".[2] Despite this translation, the original term, *nakchim*, incorporates pathological information that the condition is associated with sleeping, while the translated term does not. This is why the term "stiff neck," which can be confused with a simple symptom of stiffness that may occur in the neck, cannot accurately represent the original condition. Furthermore, in East Asia, such as Korea and China, the term *nakchim* is more commonly used instead of the term suggested by WHO. Therefore, in this review, we used the original term instead of the translated term.

In 2011, a Delphi consensus conducted during the development of the acupuncture clinic practice guidelines for cervical pain in Korea suggested that *nakchim* can be one of the formal EATM diagnoses in cervical pain.[3] Although there is no standard diagnostic criterion for *nakchim*, in a double-blind, randomized controlled trial (RCT) of *nakchim* patients, it was defined as follows: the pain and restricted motion range of neck occurred within 2 weeks; either unilateral or bilateral side can be affected; there should be no history of neck trauma; and there should be no abnormalities on radiological examinations.[4]

Although acupuncture and acupressure share same treatment points, the so-called acupuncture points, the latter is non-invasive and relatively safe because it uses human fingers or tools to press some acupuncture points without skin penetration. Acupressure has been recognized for its effectiveness in various health problems.[5,6] Because there is no legal restriction such as medical license for treatment, it has low entry barriers. It can be performed by patients themselves or healthcare providers such as caregivers or nurses, although some technical knowledge is still required to perform acupressure.[6–8] The role of caregivers and nurses is very important in patient-centered care to provide the optimal treatment environment for patients.[9,10] In this situation, acupressure is a sharable treatment among caregivers, nurses, and doctors who manage patients in the front line, and if sufficient education is given, it is also a promising treatment that patients can perform to improve their own health.[6]

In this review, we systematically reviewed to analyze the acupressure methods on *nakchim*, and to assess its therapeutic effect.

2. Methods

2.1. Search strategy

We conducted a systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[11] A systematic search was conducted on eight databases; PubMed, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), China National Knowledge Infrastructure (CNKI), Japan Science & Technology Information Aggregator, Electronic (J-STAGE), Research Information Sharing Service (RISS), Koreanstudies Information Service System (KISS), and Oriental Medicine Advanced Searching Integrated System (OASIS). Table 1 shows the search strategies implemented in each database. All papers published until August 29, 2017 were searched.

Table 1 – Search Strategies

DB: PubMed, CENTRAL
("neck stiffness" OR "stiff neck" OR "acute fibrositis") AND ("acupressure" [MeSH Terms] OR "acupressure")

DB: EMBASE
#1 "neck stiffness"/exp OR "neck stiffness" OR "stiff neck"/exp OR "stiff neck" OR "acute fibrositis"
#2 acupressure
#3 #1 AND #2

DB: CNKI
(落枕 OR 项强 OR 失枕 OR neck stiffness OR stiff neck) AND (指压 OR 按压 OR 穴位按按 OR acupressure)

DB: J-STAGE
落枕 OR 项强 OR 失枕 OR neck stiffness OR stiff neck

DB: RISS, OASIS, KISS
낙침 OR 락침 OR 항강 OR 落 枕

2.2. Study selection

In this study, the inclusion criteria were set according to an existing RCT and a textbook in China as follows.[4,12] (1) Patient: Patients should be suffering from pain and restricted motion range in the neck, which occurred within 2 weeks, and have no history of physical trauma or no abnormality on radiological examination. However, even if detailed medical histories were not reported, studies reporting that patients are suffering from *nakchim* were also included. (2) Intervention: Patients should be treated with acupressure. Acupressure was defined as a treatment to achieve therapeutic effects by pressing acupuncture points using a finger or a non-invasive tool. (3) Comparison: There was no restriction on comparison. (4) Outcome: Study should report the treatment effect using outcome measurements such as Visual Analog Scale (VAS), Numeric Rating Scale (NRS), Neck Disability Index (NDI), or clinical effective rate (CER) based on improvement of the symptoms. (5) Design: Clinical studies including case reports, case series, before–after study, and controlled study were allowed. Two authors independently selected relevant studies, and any disagreement was solved through discussion.

2.3. Data extraction

The study design, sample size, treatment method, duration and frequency of treatment, concurrent treatment, outcomes, results, and any adverse events reported were extracted from each study using a standardized extraction form. Two authors independently extracted the data and any disagreement was solved through discussion.

2.4. Data analysis

In order to distinguish the effects of physical massage on the affected muscle, the acupressure methods of included studies were divided into two categories: proximal acupressure performed on acupuncture points located in neck and shoulder,

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