INPLASY PROTOCOL

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Effects of thirteen Different photodynamic therapies on inflammatory and non-inflammatory lesions in acne Patients—A Network Meta-Analysis of Randomized Controlled Trials

Long, XX[1]; Peng, XB[2].

Review question / Objective: Population:participants with a diagnosis of acne vulgaris using clinical diagnosis or validated diagnostic criteria were included, regardless of age, gender, setting. Intervention: This review compares different photodynamic treatments for acne.The intervention group was defined as photodynamic therapy in addition to conventional treatment, which must include photosensitizer and light. Comparator: The control group was defined as the blank group or the conventional treatment group, including photosensitizer topical application, conventional drug therapy, and light therapy alone. Outcomes:The primary outcome was the mean change in the number of noninflammatory and inflammatory lesions from baseline. All included studies must clearly report at least one endpoint that we are concerned with. Study design: Only randomized controlled trials (RCTs) for photodynamic treatment on acne vulgaris were included enclosed.

INTRODUCTION

Review question / Objective: Population:participants with a diagnosis of acne vulgaris using clinical diagnosis or validated diagnostic criteria were included, regardless of age, gender, setting. Intervention: This review compares different photodynamic treatments for acne.The intervention group was defined as photodynamic therapy in addition to conventional treatment, which must include photosensitizer and light. Comparator: The control group was defined as the blank group or the conventional treatment group, including photosensitizer topical application, conventional drug therapy, and light therapy alone. Outcomes:The primary outcome was the mean change in the

number of noninflammatory and inflammatory lesions from baseline. All included studies must clearly report at least one endpoint that we are concerned with. Study design: Only randomized controlled trials (RCTs) for photodynamic treatment on acne vulgaris were included enclosed.

Condition being studied: Acne is a chronic inflammatory disease of the hair follicle's sebaceous unit characterized by androgen-induced increased sebum production, keratinizing changes, inflammation, and bacterial colonization of the face, neck, chest, and back hair follicles. Recent studies have demonstrated that photodynamic therapy (PDT) is a safe and effective method for the treatment of acne vulgaris. However, there are few studies conduct quantitative analysis on the efficacy of different PDT, and novel PDT treatments have shown surprising and encouraging promise recently.

METHODS

Participant or population: Participants with a diagnosis of acne vulgaris using clinical diagnosis or validated diagnostic criteria were included, regardless of age, gender, setting.

Intervention: Photodynamic therapies was the main intervention(e.g. ALA+red light, ALA+blue light).

Comparator: The control group was defined as the blank group or the conventional treatment group, including photosensitizer topical application, conventional drug therapy, and light therapy alone.

Study designs to be included: Only randomized controlled trials (RCTs) for photodynamic treatment on acne vulgaris were included.

Eligibility criteria: We also excluded trials in which all participants were diagnosed with: unusual acne, acne inversa, rosacea, chloracne, acne fulminans, occupational acne, drug-induced acne and acne

particularly link to endocrinopathies, including polycystic ovary syndrome, or were only using the trial treatment as maintenance therapy immediately following another acne treatment.

Information sources: PubMed, Embase, Web of science and the Cochrane Central Register of Controlled Trials (CENTRAL).

Main outcome(s): The primary outcome was the mean change in the number of noninflammatory and inflammatory lesions from baseline.

Quality assessment / Risk of bias analysis: Two researchers independently assessed the risk of bias in included studies using the Cochrane Risk of Bias Tool (Higgins and Green, 2011). The evaluation content includes: random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome evaluation, incomplete outcome data, selective reporting, and other bias.

Strategy of data synthesis: According to the PRISMA NMA instruction manual, we utilized Stata software (version 15.1) to aggregate and analyze NMA data.

Subgroup analysis: We performed subgroup analysis based on the following factors: age (adolescent vs adult), study setting (clinical vs community), and geographic region (Middle East vs Asia vs Africa vs Europe vs North America).

Sensitivity analysis: Sensitivity analysis was carried out to eliminate literatures one by one to judge the stability of the results.

Country(ies) involved: China.

Keywords: photodynamic; acne; network meta-analysis.

Contributions of each author:
Author 1 - Xin-xin Long.
Author 2 - XB Peng.