

A large portion of the world's population is affected by acne vulgaris (AV), with many of these individuals being adolescents. It has been proven to reduce levels of circulating androgens in patients with insulin resistance, indicating its potential for treating AV. A search strategy was developed and performed using the databases Ovid Medical Literature Analysis and Retrieval System Online (MEDLINE), Excerpta Medica database (EMBASE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Controlled Register of Trials (CENTRAL), and Web of Science. The underlying mechanism of AV is hyperkeratinization and Cutibacterium acnes infection of the pilosebaceous follicle secondary to excessive stimulation of sebaceous glands by androgens. Metformin is a biguanide medication primarily used in efforts to lower patients' sugar levels in the management of type 2 diabetes.