Clinical Course and Prognosis of Cutaneous Manifestations of COVID-19: A Systematic Review of Reported Cases

Authors : Hilary Modir, Kyle Dutton, Michelle Swab, Shabnam Asghari

Abstract : Since its emergence, the cutaneous manifestations of COVID-19 have been documented in the literature. However, the majority are case reports with significant limitations in appraisal quality, thus leaving the role of dermatological manifestations of COVID-19 erroneously underexplored. The primary aim of this review was to systematically examine clinical patterns of dermatological manifestations as reported in the literature. This study was designed as a systematic review of case reports. The inclusion criteria consisted of all published reports and articles regarding COVID-19 in English, from September 1st, 2019, until June 22nd, 2020. The population consisted of confirmed cases of COVID-19 with associated cutaneous signs and symptoms. Exclusion criteria included research in planning stages, protocols, book reviews, news articles, review studies, and policy analyses. With the collaboration of a librarian, a search strategy was created consisting of a mixture of keyword terms and controlled vocabulary. Electronic databases searched were MEDLINE via PubMed, EMBASE, CINAHL, Web of Science, LILACS, PsycINFO, WHO Global Literature on Coronavirus Disease, Cochrane Library, Campbell Collaboration, Prospero, WHO International Clinical Trials Registry Platform, Australian and New Zealand Clinical Trials Registry, U.S. Institutes of Health Ongoing Trials Register, AAD Registry, OSF preprints, SSRN, MedRxiV and BioRxiV. The study selection featured an initial pre-screening of titles and abstracts by one independent reviewer. Results were verified by re-examining a random sample of 1% of excluded articles. Eligible studies progressed for full-text review by two calibrated independent reviewers. Covidence was used to store and extract data, such as citation information and findings pertaining to COVID-19 and cutaneous signs and symptoms. Data analysis and summarization methodology reflect the framework proposed by PRISMA and recommendations set out by Cochrane and Joanna Brigg's Institute for conducting systematic reviews. The Oxford Centre for Evidence-Based Medicine's level of evidence was used to appraise the quality of individual studies. The literature search revealed a total of 1221 articles. After the abstract and full-text screening, only 95 studies met the eligibility criteria, proceeding to data extraction. Studies were divided into 58% case reports and 42% series. A total of 833 manifestations were reported in 723 confirmed COVID-19 cases. The most frequent lesions were 23% maculopapular, 15% urticarial and 13% pseudo-chilblains, with 46% of lesions reporting pruritus, 16% erythema, 14% pain, 12% burning sensation, and 4% edema. The most common lesion locations were 20% trunk, 19.5% lower limbs, and 17.7% upper limbs. The time to resolution of lesions was between one and twenty-one days. In conclusion, over half of the reported cutaneous presentations in COVID-19 positive patients were maculopapular, urticarial and pseudo-chilblains, with the majority of lesions distributed to the extremities and trunk. As this review's sample size only contained COVID-19 confirmed cases with skin presentations, it becomes difficult to deduce the direct relationship between skin findings and COVID-19. However, it can be correlated that acute onset of skin lesions, such as chilblains-like, may be associated with or may warrant consideration of COVID-19 as part of the differential diagnosis.

Keywords : COVID-19, cutaneous manifestations, cutaneous signs, general dermatology, medical dermatology, Sars-Cov-2, skin and infectious disease, skin findings, skin manifestations

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