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N-of-1 trials in the clinical care of patients in developing countries: A systematic review

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N-of-1 trials, which are single patient multiple crossover studies, offer a pragmatic means of providing patient-centred medicine, and have a potential role to bring personalized medicine to developing countries. However, there is limited academic literature regarding the use of N-of-1 trials in the clinical care of patients in resource-poor settings. This review assessed the extent of use, purpose and treatment outcome of N-of-1 trials in developing countries. A systematic review of clinical N-of-1 trials was conducted between 1985 and September 2015 using PubMed, Embase, CINAHL, Web of Science and the Cochrane Central Register of Controlled Trials. Quality assessment and data extraction were conducted by two independent reviewers. Out of 131 N-of-1 trials identified, only 6 (4.5%) were conducted in developing countries. The major reason that N-of-1 trials were used was to provide evidence on feasibility, effectiveness and safety of therapies. A total of 72 participants were involved in these trials. Five of the studies were conducted in China and all evaluated Chinese traditional medicine. The remaining study was conducted in Brazil. The completion rate was 93%. More than half, 46 (69%) of subjects made medication changes consistent with trial results after trial completion. The key implication of the sparse evidences included in this review is that N-of-1 trials designed and conducted well, could be possible in developing countries. Physicians in these countries may be able to use these trials to optimize clinical care for individual patients, while at the same time contributing to medicine quality assurance. However, the prevalence and scope of N-of-1 trials in developing countries is low. A coordinated effort among government, clinicians, researchers and sponsor organizations is needed to increase their uptake and quality in developing countries.

Biography

Chalachew Alemayehu is a PhD candidate in University of Queensland, Australia. His PhD is on the role of N-of-1 trials in the clinical care of patients in developing countries. He is a primary care Medical Practitioner in Ethiopia. He has published 14 research papers and has been serving as a peer reviewer of journals.

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