

INTISARI

Penyakit autoimun merupakan penyakit kronis yang memerlukan penanganan dengan penggunaan obat yang lama sehingga kejadian efek samping obat sangat besar. Epigallocatekin galat (*epigallocatechin gallate*, EGCG) dapat menjadi terapi komplemen maupun kandidat obat baru bagi penyakit autoimun karena terbukti memiliki efek anti-inflamasi dan efek terapeutik pada penyakit autoimun. Keseimbangan diferensiasi sel T *helper* (Th) dan sel T regulator (Treg) adalah kunci terjadinya toleransi imun yang mencegah kejadian dan keparahan penyakit autoimun. Oleh karena itu, pada *narrative review* ini akan diulas efek imunomodulasi EGCG terhadap keseimbangan diferensiasi sel Th dan Treg pada berbagai penyakit autoimun secara komprehensif.

Pencarian artikel dilakukan menggunakan *database* Scopus, PubMed, dan Google Scholar dengan limitasi pencarian berupa *original research* dan *review article* dan tahun terbit 2000-2020.

Narrative review ini berhasil mengulas 95 artikel dan menunjukkan bahwa ketidakseimbangan diferensiasi sel, berupa peningkatan diferensiasi sel Th1 dan Th17 serta penurunan diferensiasi sel Th2 dan Treg, terlibat dalam patogenesis penyakit autoimun, termasuk *rheumatoid arthritis* (RA), *multiple sclerosis* (MS), *ulcerative colitis* (UC), dan *autoimmune uveitis* (AU). Sementara itu, EGCG mampu memodulasi keseimbangan diferensiasi sel dengan menurunkan diferensiasi sel Th1 dan Th17 serta meningkatkan diferensiasi sel Th2 dan Treg pada dengan hewan uji model RA, MS, UC, dan AU. Bersamaan dengan itu, EGCG juga terbukti mampu memperbaiki kondisi klinis hewan uji.

Kata kunci: Epigallocatekin galat, sel T *helper*, sel T regulator, autoimun

ABSTRACT

Autoimmune disease is a chronic disease that requires treatment with prolonged use of drugs. Therefore, the incidence of drug side effects is very large. Epigallocatechin gallate (EGCG) can be a complementary therapy as well as a candidate for new drugs for autoimmune diseases because it has been proven to have anti-inflammatory and therapeutic effects in autoimmune diseases. The balance of helper T cell (Th) and regulatory T cell (Treg) differentiation is the key to immune tolerance that prevents the incidence and severity of autoimmune diseases. Therefore, this narrative review will comprehensively review the effects of immunomodulating EGCG on the balance of differentiation of Th and Treg cells in various autoimmune diseases.

Article searches were carried out using the Scopus, PubMed, and Google Scholar databases with search limitations in the form of original research and review articles and published years 2000-2020.

This narrative review successfully reviewed 95 articles and showed that the imbalance of cell differentiation, in the form of increased differentiation of Th1 and Th17 cells and decreased differentiation of Th2 and Treg cells, is involved in the pathogenesis of autoimmune diseases, including rheumatoid arthritis (RA), multiple sclerosis (MS), ulcerative colitis (UC), and autoimmune uveitis (AU). Meanwhile, EGCG can modulate the balance of cell differentiation by decreasing the differentiation of Th1 and Th17 cells and increasing the differentiation of Th2 and Treg cells in RA, MS, UC, and AU model test animals. Additionally, EGCG is also proved capable to improve the clinical conditions of tested animals.

Keywords: *Epigallocatechin gallate, helper T cell, regulatory T cell, autoimmune*