INTISARI

Penyakit jaringan periodontal mencakup berbagai keadaan inflamasi yang terjadi pada jaringan pendukung gigi. Terapi penyakit ini secara umum gagal meregenerasi jaringan periodontal sehingga saat ini dikembangkan penggabungan terapi dengan *Platelet-Rich Fibrin* (PRF). *Platelet-derived growth factor*-BB (PDGF-BB) merupakan salah satu *growth factor* yang dilepaskan PRF yang dilaporkan terlibat dalam aktivitas biologis seperti penyembuhan luka, pertumbuhan sel, dan angiogenesis. *Narrative review* ini bertujuan untuk mengetahui peran kandungan PDGF-BB dalam PRF terhadap penyembuhan jaringan periodontal.

Penelusuran sumber pustaka pada *narrative review* ini menggunakan *database PubMed, Science Direct, WILEY Online Library,* dan *Google Scholar* dengan kriteria inklusi berupa artikel penelitian, *review*, *case report,* dan buku berbahasa Inggris dan Indonesia yang dipublikasikan dalam rentang 2011-2021. Kriteria eksklusi berupa artikel yang tidak tersedia dalam satu teks utuh, tidak dapat diakses, dan artikel penelitian yang tidak menyertakan metode penelitian. Total literatur yang di-*review* untuk membahas mengenai peran kandungan PDGF-BB dalam PRF terhadap penyembuhan jaringan periodontal adalah 17 literatur.

Hasil dan kesimpulan *review* menunjukkan bahwa penambahan PDGF-BB terbukti dapat meningkatkan maturitas, perlekatan, dan proliferasi sel fibroblas. *Platelet-derived growth factor*-BB juga memiliki kemampuan dalam meningkatkan ekspresi marker sel punca dan menjaga karakteristik sel punca sehingga sel punca dapat berdiferensiasi menjadi berbagai jenis sel. Material pembawa atau kombinasi *growth factor* lainnya dibutuhkan PDGF-BB untuk mendukung aksi regenerasinya. Material pembawa *growth factor* yang dijadikan pilihan saat ini adalah PRF. *Platelet-derived growth factor*-BB dalam PRF dilepaskan lebih tinggi pada hari 1 hingga 10. Urutan pelepasan PDGF-BB pada jenis PRF yang dibahas dalam *review* ini, mulai dari yang paling tinggi, berturut-turut, terdapat pada A-PRF+, A-PRF, dan PRF.

Kata kunci: *Platelet-Derived Growth Factor-BB*, *Platelet-Rich Fibrin*, penyembuhan jaringan periodontal, regenerasi jaringan periodontal.

ABSTRACT

Various inflammatory conditions that occur in the teeth supporting tissues was periodontal disease. Periodontal tissue regeneration had failed to be achieved through the treatment of periodontal diseases in general, so that many therapies had been developed to combine these periodontal disease therapies with the addition of Platelet-Rich Fibrin (PRF). Platelet-Derived Growth Factor-BB (PDGF-BB) was one of the growth factors released by PRF that was involved in several biological activities, such as wound healing, cell growth, and angiogenesis. This review aimed to determine the role of PDGF-BB in PRF on periodontal healing.

The databases for literature searching in this narrative review were PubMed, Science Direct, WILEY Online Library, and Google Scholar. The inclusion criteria were research articles, reviews, case reports, and textbooks written in English and Indonesian published within 2011-2021. The exclusion criteria were articles that were not available in one full text, articles that could not be accessed, and research articles that did not include research methods. A total of 17 articles were reviewed in this narrative review which showed the role of PDGF-BB in PRF on periodontal healing.

The results and conclusion of the review showed that the addition of PDGF-BB had been shown to improve the maturation, attachment, and proliferation of fibroblast cells. Platelet-derived growth factor-BB could also increase the expression of stem cell markers and maintain stem cell characteristics so that stem cells can differentiate into various cell types. Carrier material or combination with other growth factors was needed by PDGF-BB to support its regeneration action. The current choice of growth factor carrier material is PRF. On days 1 to 10, higher PDGF-BB in PRF was released. The order of PDGF-BB release in the types of PRF discussed in this review, starting from the highest, was found in A-PRF+, A-PRF, and PRF.

Keywords: *Platelet-Derived Growth Factor-BB, Platelet-Rich Fibrin, periodontal wound healing, periodontal regeneration.*