Kajian jumlah serat kolagen interstisial paru dan korelasinya dengan ketebalan septum interalveolar pada penuaan tikus sprague dawley = Study of pulmonary interstitial collagen fiber and its correlation with interalveolar septum thickness in sprague dawley rat aging

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Abstrak

Latar belakang: Penuaan paru ditandai dengan perubahan struktur dan fisiologi paru. Secara struktural, terjadi perubahan ketebalan septum interalveolar dan komponen di dalamnya, salah satunya adalah serat kolagen interstisial, sehingga dapat memengaruhi fungsi paru sebagai organ respirasi. Tujuan dari penelitian ini adalah mengetahui korelasi antara jumlah serat kolagen interstitial paru dengan ketebalan septum interalveolar pada penuaan tikus Sprague-Dawley. Metode: Desain penelitian yang digunakan adalah cross sectional analytic correlative. Penelitian ini menggunakan 24 ekor tikus Sprague-Dawley sebagai subjek penelitian. Subjek penelitian terdiri atas empat kelompok usia, yaitu 2 hari, 16 hari, 3-4 bulan, dan >12 bulan yang ditentukan dengan m ± 0.043 m, dan 0,512 ± 0.020 m. Uji korelasi non parametrik Spearman (p = 0,03) antara jumlah serat kolagen interstisial dengan ketebalan septum interalveolar menunjukkan nilai koefisien korelasi (r = 0,213). Kesimpulan: Pada penelitian ini disimpulkan bahwa terdapat korelasi yang lemah antara jumlah serat kolagen interstisial paru dengan ketebalan septum interalveolar pada penuaan tikus Sprague-Dawley. Dengan demikian, dapat dipikirkan bahwa serat kolagen interstisial dapat mempengaruhi ketebalan septum interalveolar paru tikus yang menua, meskipun bukan satu-satunya faktor yang mempengaruhi. ..... Background: Lung aging is characterized by structure and physiologic changes of the lung. Structurally, the interalveolar septum thickness and all of its components including collagen fiber are change, so that affect the lung function as a respiratory organ. This study is aimed to determine the correlation between the amount of pulmonary interstitial collagen fiber and interalveolar septum thickness on Sprague-Dawley rat aging. Method: The design of this research is cross sectional analytic correlative. The data was taken from the lung tissue preparations of 24 rats in 4 groups based on age, 2 days, 16 days, 3-4 months, and >12 months using single blind randomization technique. The methods of preparation making are based on the literatures. Data that was assessed were the histology of pulmonary interstitial collagen fiber and interalveolar septum. Then, they were analized using SPSS 20.0. Result: Sequentially, the modes of interstitial collagen fiber are 1, 2, 2, and 3; while the interalveolar septum thickness means are 0,436 ± 0.059 m, 0,399 ± 0.022 m, 0,474 ± 0.043 m, and 0,512 ± 0.020 m. By using non parametric Spearman correlation test (p = 0.03), it was obtained the correlation coefficient (r = 0.213) between the amount of pulmonary interstitial collagen fiber with the interalveolar septum thickness. Conclusion: There is a weak correlation between the amount of pulmonary interstitial collagen fiber with the interalveolar septum thickness of Sprague- Dawley rat aging. Thus, it can be thought that pulmonary interstitial collagen fiber may affects interalveolar septum thickness of rat aging, although it’s not as the only one factor.