Hubungan antara panjang ruang udara alveolus dengan penuaan pada sediaan paru tikus sprague dawley melalui pengukuran diameter alveolus = Correlation between alveolar air space and aging aging in sprague dawley rats lung by measuring its diameter

Ziyad Fadlullah, author

Abstrak

Latar belakang: Pada penuaan paru, terjadi perubahan fisiologi, parenkim, anatomi serta imun. Perubahan fisiologi dapat dilihat dari perubahan volumevolume paru fisiologis pada pengukuran spirometri. Perubahan anatomi antara lain pada dinding dada, otot respirasi serta perubahan parenkim paru dan saluran napas. Perubahan parenkim paru yang telah diteliti salah satunya adalah penurunan serat elastin sehingga daya elastik rekoil berkurang. Tujuan penelitian adalah mengetahui hubungan/korelasi antara ruang udara alveolus, terhadap penuaan.
Metode: Desain penelitian adalah cross sectional analytical correlative. Subjek penelitian adalah tikus Sprague-Dawley dengan rentang usia 2 hari, 16 hari, 3 – 4 bulan dan 12 bulan yang ditentukan dengan single blind randomization dengan total 24 ekor. Data yang diambil adalah panjang ruang udara alveolus yang diukur menggunakan perangkat lunak Optilab Image Raster. Data diolah dengan uji korealsi Spearman dengan bantuan software SPSS.
Hasil: Rata- rata ruang udara alveolus berdasarkan usia 2 hari, 16 hari, 3-4 bulan dan 1 tahun adalah 0.467 + 0.038, 0.410 + 0.052, 0.369 + 0.046 dan 0.378 + 0.028. Uji korelasi antara panjang ruang udara alveouls dengan penuaan menunjukkan adanya korelasi lemah (r = -0.227), yaitu semakin bertambah usia (penuaan), panjang ruang udara alveolus semakin kecil.
Kesimpulan: Berdasarkan hasil dan pembahasan dari penelitian ini, dapat disimpulkan bahwa terdapat hubungan antara ruang udara alveolus penuaan, yakni semakin bertambah usia, terjadi perubahan pada ruang udara alveolus.
.....
Background: Aging is a complex process that occurs in each organ. In lung aging, there are some changes in physiology, parenchyma, anatomy and immune system. Physiological changes can be seen from the changes in physiological lung volumes on spirometry measurements. Anatomical changes occurs in the chest wall, muscles of respiration and changes in the lung parenchyma and airways. One of lung parenchyma changes which were investigated is the reduction of elastin fibers that elastic recoil force is reduced. Focus of this study is the relation / correlation between the alveolar air space, with all the evidence of the changes associated with aging, in aging lung.
Method: This study design were cross sectional analytical correlative. Subjects of this research are Sprague-Dawley rats, aged 2 days, 16 days, 3-4 months and 12 months and determined by single blind randomization with total subject are 24. The data is length of the alveolar air spaces and were measured using the software Raster Image Optilab. The data were processed by Spearman correlation using SPSS.
Result: Alveolar air space average based on age of 2 days, 16 days, 3-4 months and 12 months are 0.467 + 0.038, 0.410 + 0.052, 0.369 + 0.046 dan 0.378 + 0.028. Correlation between the length of the air space alveolus with aging showed a weak correlation (r = -0227), which in increasing age (aging), the length of the

alveolar air space become smaller.

Conclusion: Based on results and discussion, it can be concluded that there is correlation between lung aging and alveolar air space, increase in age make some change in alveolar air space. The increasing age, there is change in alveolar air space.