Perubahan ekspresi tenasin-C. jumlah, dan diameter serat otot gastroknemius dan soleus Tikus usia 1 hari 3 bulan, dan 12 bulan = Changes in expression of tenascin-C, muscle fiber number and diameter of gastrocnemius and soleus muscles in rats aged 1 day, 3 months, and 12 months

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Abstrak

Latar belakang: Otot rangka adalah jaringan yang dinarnis. Proses perkembangan dan regenerasinya dipengaruhi oleh berbagai faktor pertumbuhan, antara lain tenasln-C. Tenasin-C adalah suatu glikoprotein heksabrakion matriks ekstrasel yang mempunyai subunit EGF-like. Tenasin-C berfungsi sebagai regulator berbagai fungsi seL Ekspresinya dapat dilihat dengan cara imunohisto kimia dan dinilai secara semikuantitatif dengan estimasi visual. Belum dtketahui ekspresi tenasin-C pada jaringan otot rangka berkaitan dengan proses perkembangan dan korelasinya dengan jumlah dan diameter serat otot rangka. Dlduga seiring bertambahnya usia akan terjadi penunman ekspresi tenasin-C dan bertambahnya jumlah dan diameter serat otot. Diharapkan di kemudian hari dapat dikembangkan terapi kerusakan atau kelainan otot meJalui optimalisasi regenerasi sentt otot dengan pemberian tenasin-C eksogen.
Metode: Desain penelitian ini adalah perbandingan potong lintang dengan subyek tikus Sprague-Dawley jantan usia l-4 hari, 3-4 bulan, dan 12-16 bulan. Sediaan mikroskopik diwarnal dengan hematoksilin eosin TNC. Fotomikrograf dianalisis dengan Digimizer Image Analyzer. Anaiisis imunoreaktivltas TNC dilakukan berdasarkan intensitas pewamaan dan pola ekspresi.
Hasil: Terdapat penambahan jumlah dan diameter sera! otot rangka dari kelompok usia 1-4 hari sampai kelompok usia 12-16 bulan. Ekspl}'Si TNC ditemukan pada otot rangka semua kelompok umur. Ekspresi kuat terhadap TNC paling sering ditemukan di kelompok usia l-4 hari. Ekspresi negatif dan ekspresi lemah paling sering ditemukan di kelompok usia 12-16 bulan.
<hr>Background: Skeletal muscle is a dynamic tissue. Its development and regeneration processes are influenced by various growth factors. Amongst those factors is tenascin C 1NC is one of the extracellular matrix glycoprotein with EGF-like subunit. TNC acts as regulator for several cell functions. Its expression can be detected immunohistochernically and analyzed semiquantitatively using visual estimation. TNC expression in skeletal muscle related with developmental process and its correlation with skeletal muscle fiber number and diameter is, to date, not yet known. The preferred hypothesis is with increasing age. there wi11 be decreasing TNC expression and increment of skeletal muscle fiber number and diameter.
Methods: This is a comparative cross-sectional study. Subjects are male Sprague-DawJey rats, divided into 3 age groups: l-4 days, 3-4 months. and 12-16 months. Microscopic specimens were made and stained with hematoxylin-eosin and TNC immunohistochemistry. Microphotographs: were analysed using Digimizer Image Analyzer. Immunoreactivity of TNC was classified based on staining intensity and expression pattern.
Result: There is an increase in skeletal muscle fiber number and diameter from 1 day to 16 months. TNC expression was positive in all age groups. Strong TNC expression was found in 1-4 day-oJd group. Negative and weak expressions were found mostly in adult group. 'There is a positive correlation between TNC

extracell expression pattern with muscle fiber number and diameter, and also between TNC weak expression with muscle fiber number and diameter.