Postnatal development of the syrian golden Hamster pancreas - Morphological and Morphometric study

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Key words: Development, pancreas, hamster, morphometry

SUMMARY

Ponderal, morphometric and morphological assessments were used to study the Syrian golden hamster pancreas development during the first 70 days of postnatal life. The body mass increased 41.74 times in a single growth phase and a mean duplication time calculated by linear equation $y = 1.76\ x - 1.87$ ($r^2 = 0.95$), was 13.4 days. The pancreatic mass increased 44.60 times in two growth phases, the first from 2 to 21 days and the second from 28 to 70 days of age. The exponential equation obtained by regression analysis for these periods, were: $y = 5.21.\ e^{(0.1810.x)}$ ($r^2 = 0.95$) and $y = 156.64.\ e^{(0.0094.x)}$ ($r^2 = 0.72$), respectively, and the calculated duplication times were: 3.8 and 73.7 days, respectively. This marked pancreatic growth was due to the increase in all theirs morphological compartments, especially of the acini. An inverse relationship was observed in the volume density evolution between the acini and the stroma, with a 2.30 times increase in the fraction of pancreatic volume occupied by the acini and a 0.26 times reduction in the connective tissue spaces during studied period. The volume density of pancreatic islets increased 4.47 times from 21 to 35 days of age. The morphological analysis showed a significant increase in the height and width of the acinar cells and in the size of the acini especially from 14 to 21 days of age, a relative reduction in the stromal volume, an increase in the size of the pancreatic islets and the end of parenchymal cell maturation and lobar and lobular organization, so glandular maturity was obtained.