



Development of somatostatin and bombesin-secreting cells of proventriculus from Shao ducks

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Abstract

AIM: To study the development of D (somatostatin secreting) and P (bombesin secreting) cells of proventriculus from Shao ducks at different ages.

METHODS: Ninety Shao ducks were divided into nine groups, 10 ducks per group. The ducks were slayed group by group at the nine time points of week 0 (after hatching), 1, 2, 4, 6, 10, 14, 18 and 22. Proventriculus samples from each duck were collected, fixed by Bouin solution and embedded with paraffin. Sections were made and stained with an avidin-biotin peroxidase complex kit (Dako Co. Ltd.)

to visualize D and P cells of each proventriculus. Thirty glandular lobes per duck were observed for enumeration of D and P cells.

RESULTS: (1) Both D and P cells were mostly oval or polygonal shape with dumpy cytoplasmic processes and located in the inner and central area of the glandular lobe. (2) The D and P cells peaked at week 18 and 6 respectively. And (3) there was no apparent correlation between D cells and the body weight until week 4. Negative correlation was observed from week 6 and reached a marked level at 18 wk ($r = -0.829$, $P < 0.05$). Individuals with maximum body weight had less D cells than those with minimum body weight from 10-18 wk.

CONCLUSION: The morphology and distribution of D and P cells in the roventriculus of Shao ducks were similar to Peking ducks, geese and chickens. Both D and P cells had continuing development during the postnatal period, though the rates of their development were different. It appeared that beyond a definite number of D cells, they were negatively correlated with the body weight.

Key words: Somatostatin; Caerulein; Immunohistochemistry; D cells; P cells; Ducks

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