Influence of rAAV2-slug-siRNA-situ on metastasis and angiogenesis pancreatic tumor in rats

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View from specialist: It is creative, and of certain scientific and educational value.

[ABSTRACT] Objective: To investigate the influence of RNA interference slug gene recombinant adenovirus vector (rAAV2-slug-siRNA) on metastasis and angiogenesis of orthotopic pancreatic tumor. Methods: Orthotopic rat models of pancreatic cancer induced by pancreatic cancer cell line AsPC-1 were established and randomly divided into 3 groups with 8 rats in each group. Control group was treated with normal saline being injected to abdominal cavity, the negative control group with rAAV2-GFP, while the experiment group with rAAV2-slug-siRNA. Rats were sacrificed 10 weeks after the treatment, and situ pancreatic tumor weight, inhibition rate, metastasis in liver, gastrointestinal, peritoneal metastasis, ascites, as well as microvessel density of tumor cells (MVD) in each group were observed. Expression of slug mRNA, and slug protein were assessed by RT-PCR and Western blot detection, respectively. Results: Orthotopic rat models of pancreatic cancer induced by pancreatic cancer cell line AsPC-1 were established successfully with a success rate of 100%. Percentage of rats with liver metastasis, peritoneal metastasis, metastasis in adjacent organs or ascites in the experiment group was significant lower than that in the negative control group (P < 0.05), showing tumor inhibition rate of 70.83%. The induced tumor of the negative control group showed characters of hard texture, infiltration and adhesions. MVD of the experimental group was significant less than that of the negative control group (P < 0.05). The expression level of both slug mRNA and slug protein of the experiment group was lower than that of the negative control group (P < 0.05). Conclusions: rAAV2-slug-siRNA may inhibit orthotopic pancreatic tumor metastasis by inhibiting angiogenesis.

[KEY WORDS] Pancreatic cancer; slug RNA interference gene recombinant adenovirus vector; Tumor metastasis; Angiogenesis