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Cancer Prevention Research
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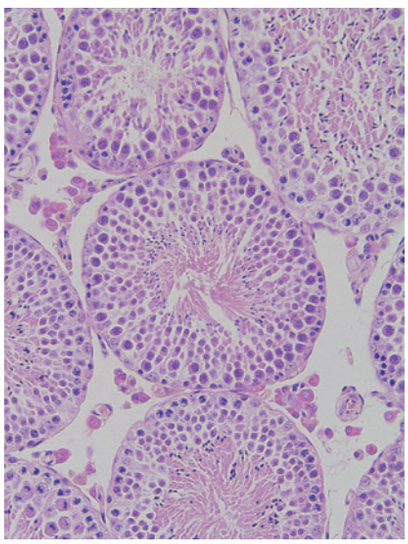

Suppression of aberrant DNA methylation is a novel approach to cancer prevention, but so far the efficacy of the strategy has not been evaluated in cancers associated with chronic inflammation. Gastric cancers (GCs) induced by *Helicobacter pylori* (HP) infection are known to involve aberrant DNA methylation and are associated with severe chronic inflammation in their early stages. Using the DNA demethylating agent 5-aza-2′-deoxycytidine (5-aza-dC), suppression of aberrant DNA methylation to prevent HP-induced GCs was investigated using a Mongolian gerbil model. The incidence of GCs induced by HP infection and N-methyl-N-nitrosourea (MNU) treatment as well as global DNA methylation levels were significantly decreased in gerbils treated with 5-aza-dC (50–55 weeks) compared to vehicle. Extra-gastric tissues were tested to assess adverse effects of 5-aza-dC, which included testicular atrophy. The cover micrograph shows a magnified view of tissue sections of nonatrophied testes in vehicle-treated gerbils. These results show that 5-aza-dC treatment can prevent HP-induced GCs and suggest that removal of induced DNA methylation and/or suppression of DNA methylation induction can become a target for prevention of chronic inflammation-associated cancers. See article by Niwa and colleagues (beginning on page 263) for more information.

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