cancer induction. Benign preneoplastic lesions were found in all groups. The number per animal, however, increased with higher levels of dietary fat, particularly when the diets were fed after carcinogen treatment. Moreover, some carcinogen-treated hamsters also developed acinar cell nodules when fed the semisynthetic diet. This did not occur after being fed the commercial diet. These studies indicate that dietary fat has a promoting effect on pancreatic carcinogenesis.

EXOCRINE PANCREAS ALTERATIONS AND RELATED NEOPLASIA IN SELECTED AUTOPSY MATERIAL

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Eighty three pancreata from autopsy material obtained from the Omaha, USA Veteran's Hospital, and from neighboring county hospitals, were thoroughly examined histologically, and the exocrine and endocrine tissue alterations recorded according to their zonal distribution. Hyperplasia, metaplasia and dysplasia affecting the ducts and the ductules were found in 47 (57 %) and 32 (39 %) of the cases, respectively. Of major interest was the occurrence of squamous cell metaplasia of the ductules in 7 (8 %) of the samples, some showing atypical patterns. Carcinoma in situ of the ducts was found in 1 (1 %) case and that of the ductules in larger numbers (5 %). There were three cases of early cancer, definitely of a ductular origin, and 3 of invasive cancer; 2 of these were clinically known adenocarcinomas and 1 was adenosquamous cancer with metastases of squamous cell components to the lungs. (This case had been mistakenly diagnosed as primary squamous cell cancer of the lung with metastases to the pancreas.) These 3 cancers also seemed to be of ductular origin. Most of these lesions were multifocal, and most were found in the pancreas head. In addition, endocrine tissue alterations were found in many of these samples.
It was concluded that in man, as in experimental animals, the ductular cells are the primary source of pancreatic exocrine cancer, including squamous cell carcinoma. The morphology and the histogenesis of individual lesions will be outlined and the possible reasons for the predilection of pancreatic tumors to occur in the head region will be discussed.

HUMAN MONONUCLEAR CELLS PRODUCE INTERFERON IN COCULTURE WITH TUMOR CELLS

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Ficoll Metrizoat separated, human mononuclear cells (MNC) were induced to produce interferon (IFN) by short term culture on viable or glutaraldehyde-fixed monolayers of the mammary carcinoma cell line, BT20. The amounts of IFN in the supernatants of both types of coculture were comparable for single MNC donors. Interferon production by MNC of 12 normal blood donors resulted in widely divergent IFN titers when cocultured with viable BT20 ($<$10-320 units/ml/24h/10^6MNC). From two donors, MNC were collected four times over a two week period and IFN production was induced on glutaraldehyde-fixed BT20 of the same passage. Again, a wide range of IFN titers were observed, similar to that seen for single donors.
Our results suggest that the IFN producing potential of MNC varies considerably between donors as well as in single donors on repeated bleeding. Furthermore it is clear, that glutaraldehyde-fixed tumor monolayers are useful "solid phase" IFN inducers without metabolic activity and may be employed to determine the IFN producing capacity of human MNC from different sources under constant conditions.

NAUSEA, VOMITING AND CANCER CHEMOTHERAPY

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With modern aggressive treatment approaches to tumor patients nausea and vomiting are an increasing, often dose limiting problem. Before vomiting is attributed to treatment other causes such as brain metastases, gastrointestinal obstruction, endocrine and metabolic abnormalities should be excluded. Pathophysiology of vomiting is incompletely understood. Vomiting is controlled by the vomiting center in the medullary reticular formation. Input from three major sites, i.e. the chemoreceptor trigger zone, the so called periphery and higher central nervous system structures, can produce vomiting. Although most of the anticancer agents do not pass the blood - brain barrier they can induce nausea and vomiting. This is probably due to the fact that capillaries of the area postrema consist of a leaky fenestrated endothelium allowing close chemical communication between blood and the chemoreceptor trigger zone. None of the currently used antiemetics like sedatives, antihistamines, phenothiazines, butyrophenones and metoclopramide is very satisfactory in treating chemotherapy induced vomiting. The better use of currently available agents represents an alternative to the search for new, more effective antiemetic agents. In a phase I

trial of domperidon, a dehydrobenzperidol-derivate, we gave this drug as an i.v. bolus injection followed by a continuous infusion starting one hour prior to the administration of chemotherapy.
Early results suggest that much higher than the recommended doses and the continuous administration may be more effective than intermittent low dose injections. In another open dose finding study we have used Levonantradol, a synthetic substance resembling tetrahydrocannabinol. Preliminary results show, that Levonantradol has antiemetic properties, but the best dose schedule has not yet been defined.