TREND IN INCIDENCE OF MALIGNANT MELANOMA OF THE SKIN IN ITALY.
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Malignant melanoma of the skin has increased rapidly in the last decades, and the problem of its etiology has caused considerable concern. In Italy a threefold increase in the mortality rate of melanoma has been observed in the period 1955-1978. An epidemiological study has been conducted in the city of Rome and the incidence of melanoma has been determined retrospectively for the years 1970-1979. All public and private health structures of the city were involved. A case was defined as patient resident in Rome with histological diagnosis of melanoma performed between 1970 and 1979. In the years 1970-1972 the average incidence rate per year was 0.8 per 100,000 inhabitants both for males and females; while in 1977-1979 the average rate was up to 2.0 per 100,000 for males and 2.4 for females (age standardized rates). The annual increase in incidence was 19% for males and 25% for females. Age specific incidence rates were quite similar in both sexes.

INHIBITION OF ENZYMATIC DNA METHYLATION IN VITRO BY BENZO(A)PYRENE BOUND TO DNA
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Modifcation by benzo(a)pyrene affects the enzymatic methylation of DNA. This was proved in experiments, in which M.lysodeikticus DNA and mouse P 815 (5-Aza-C) DNA containing hemimethylated sites were modified to various extents by benzo(a)pyrene diol epoxide (BPDE) and then used as substrates for highly purified DNA methyltransferases from human placenta and P 815 mouse mastocytoma cells. The transfer of methyl groups to both types of modified DNAs was decreased as compared to the unmodified controls, and the inhibition of DNA methylation was proportional to the degree of DNA modification by this carcinogen. This suggests that the benzo(a)pyrene-DNA-adduct interferes with both the "maintaining" and "de novo" activity of DNA methyltransferase.

HOST-MEDIATED TWO-STAGE CARCINOGENESIS
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4-nitroquinoline N-oxide (4NQO, 0,5% in propylene glycol) applied to the palatal mucosa of Wistar rats induces in all animals highly differentiated squamous cell carcinomas (including verrucous carcinoma) of the palate following a thrice weekly application for 16-18 weeks (complete carcinogenesis). Initiated palatal epithelium (4NQO applied six times over a period of 14 days) was grown using an established in vitro model (Exp. Cell Res., 125, 141-152, 1980), starting 6 weeks after the last initiating carcinogen dose. After 11 weeks in vitro, the cells were exposed to 12-o-tetradecanoylphorbol-13-acetate (TPA) at a dose of 5 ng per ml medium for 24 hr every 8th day through 7 weeks. After additional one week the cells were subcultured. The in vivo initiated and in vitro promoted epithelial cells demonstrated a significantly higher growth rate than did controls, controls + TPA and initiated cells without TPA-treatment. The in vivo initiated and in vitro promoted cultures showed areas with high mitotic activity and bizarre cytomorphology very likely indicating cell transformation. When implanted into nude mice, cells from these cultures developed epidermoid cysts lined by a heavily keratinized squamous epithelium arranged in a pattern indistinguishable from that of verrucous carcinoma.