

N-acetyltransferase 2 Phenotype in Painters with Bladder Cancer and Controls

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Abstract

Aim: This study was designed to evaluate the impact of N-acetyltransferase 2 (NAT2, substrate: aromatic amines) in painters with bladder cancer and controls. **Background:** Until the beginning of the 1960s, painters in Germany have used, among others, azo dyes based on carcinogenic aromatic amines. **Materials and Methods:** Sixteen painters with bladder cancer and 26 healthy painters (controls) who were from the same areas in Germany and in the same age group (± 5 years) were recruited into the study. All subjects were phenotyped for NAT2 by the molar ratio of two caffeine metabolites in the urine which was determined by the high performance liquid chromatography (HPLC) method. The number of years working as a painter, age at first exposure to paints and the life-time smoking habits of subjects were noted. **Results:** Fourteen cases and 23 controls had been exposed to paints before 1960. Age at first exposure to paint was 15.5 years (SD 5.3) in cases and 16.3 (SD 4.9) years in controls. Cases had worked 31.1 years (SD 15.0) and controls had worked 44.8 years (SD 7.2) as painters. Four cases and 7 controls were non-smokers. In this study, 88% of cases and 65% of controls were of the "slow" acetylation phenotype. **Conclusions:** The results point to an impact of the "slow" acetylation status as an individual risk factor for bladder cancer in persons occupationally exposed to amounts of carcinogenic aromatic amines released from water-soluble azo dyes.

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