VINCRISTINE SULPHATE (Group 3)

A. Evidence for carcinogenicity to humans (*inadequate*)

No epidemiological study of vincristine sulphate as a single agent was available to the Working Group. Intensive combination chemotherapy with regimens including vincristine has been shown to result in increased risks for acute nonlymphocytic leukaemia (ANLL). (See also the summary of data on MOPP and other combined chemotherapy including alkylating agents, p. 254.) Such combinations usually include procarbazine (see p. 327) together with an alkylating agent such as nitrogen mustard (see p. 269), both of which are potent animal carcinogens, suggesting more plausible explanations for the association between combination chemotherapy and ANLL. In the presence of concurrent therapy with other putative carcinogens, including ionizing radiation and other potent drugs, occasional case reports of exposure to vincristine sulphate do not constitute evidence of carcinogenesis[1].

B. Evidence for carcinogenicity to animals (*inadequate*)

In limited studies in mice and rats, no evidence of carcinogenicity was found after intraperitoneal administration of vincristine sulphate[1].

C. Other relevant data

No data were available on the genetic and related effects of vincristine sulphate in humans.

Vincristine sulphate induced micronuclei in bone-marrow cells of mice and hamsters treated *in vivo*. Conflicting results were obtained for induction of sister chromatid exchanges in human lymphocytes *in vitro*. It induced aneuploidy in and transformation of Syrian hamster embryo cells, but it did not transform mouse C3H 10T1/2 cells. It did not induce chromosomal aberrations, sister chromatid exchanges or unscheduled DNA synthesis in rodent cells *in vitro*. It induced mutation in mouse lymphoma cells but not in other rodent cells. It did not induce sex-linked recessive lethal mutations in *Drosophila* and was not mutagenic to bacteria[2].

References

[1]*IARC Monographs*, *26*, 365-384, 1981

[2]*IARC Monographs*, *Suppl. 6*, 563-565, 1987