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SV40: un possibile co-cancerogeno dell'amianto nella patogenesi del mesotelioma?

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KEY WORDS

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SUMMARY

«SV40: a possible co-carcinogen of asbestos in the pathogenesis of mesothelioma?». Background: *The etiopathogenic role of asbestos in causing malignant mesothelioma of the pleura is clearly supported by an impressive amount of data. Despite the frequent association with previous exposure to asbestos, only a relatively small fraction of those exposed develop malignant mesothelioma. The long latency period between initial exposure and onset of the tumor suggests that human mesothelioma, like many other tumors, has a multi-stage evolution with the occurrence of many mutating events involving various tumorigenic agents, probably in part initiating and in part promoting development. Recently this has raised great interest in the scientific world, in an attempt to identify possible factors which together with asbestos may have a role in developing this rare malignant tumor. Ionizing radiations and genetic susceptibility have occasionally been identified as the culprits. A virus called SV40 has been gaining increasing scientific credibility since the mid 1990's as a potential co-carcinogen of asbestos.* Objectives: *The aim of this article was to examine the supposed interaction between asbestos and SV40 in the pathogenesis of mesothelioma and the way this simian virus has become a human virus.* Methods: *All biomolecular and epidemiological data available from medical literature along with the results of the experiments performed during the last 7 years in our department laboratories were reviewed and compared.* Results: *The first two pieces of experimental evidence of the presence of SV40-like DNA sequences in mesothelioma samples were obtained in 1994 in the United States, and one year later in our laboratories. After these two studies many research groups started carrying out similar experiments, obtaining comparable results in most cases. Moreover, beyond the mere detection of viral DNA sequences large amount of biomolecular data has recently been added in favour of its role in the pathogenesis of mesothelioma. Epidemiological studies published to date were unable to provide similar unanimous results. Data regarding the source of human infection are still debatable, even if the inadvertent administration of contaminated poliovaccines to millions of people in Europe and the United States between 1955 and 1963 remains one of the most reasonable hypotheses.* Conclusions: *On the basis of all the biomolecular data reviewed and partially on the basis of epidemiological studies, SV40 seems to be the best candidate as a cofactor with asbestos in the development of human mesothelioma.*

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