

New IARC study identifies molecular profiles of malignant pleural mesothelioma, with clinical impact

Lyon, France, 25 October 2019 – A new study on malignant pleural mesothelioma has been published in the journal *EBioMedicine*.¹ Malignant pleural mesothelioma is a rare, understudied cancer that is associated with exposure to carcinogenic mineral fibres, collectively known as asbestos. The study, led by scientists from the International Agency for Research on Cancer (IARC) and partners, identified three sets of tumours with characteristic molecular features. These molecular profiles have the potential to inform the clinical management and treatment strategies for malignant pleural mesothelioma and improve the understanding of the carcinogenic processes that contribute to this lethal disease.

Most patients with malignant pleural mesothelioma die within 2 years after diagnosis, mainly because of the limited availability of therapeutic options and early detection opportunities. One of the reasons for these limitations is that there are only a few molecular studies, in contrast to the more extensive research that has been done for more common cancer types.

Although the use of asbestos has been banned in many developed countries, malignant pleural mesothelioma is still a public health problem. This is due to the long latency of the disease (several decades) together with the ageing of the population, the increased environmental exposure, and the continuing use of asbestos, mostly in developing countries, among other factors.

“Innovative sequencing technologies that provide information on the molecular characteristics of tumours can now uncover differences among tumours that look quite similar under the microscope,” says Dr Matthieu Foll, a scientist in the Genetic Cancer Susceptibility Group at IARC and a lead author of the study. “The expression of proteins associated with the immune and vascular systems in the tumours enabled us to identify molecular profiles that may explain the differences in overall survival and response to treatment.”

IARC scientists worked in close collaboration with the French MESOPATH/MESOBANK database, a multicentre exhaustive repository of national clinical data, biological samples, and standardized operational procedures for malignant mesothelioma. “We have been able to confirm our results and identify a panel of five proteins that is sufficient to characterize these molecular profiles of malignant pleural mesothelioma and that could be used in the clinic to assist the diagnosis and inform clinical management,” concludes IARC scientist Dr Lynnette Fernandez-Cuesta, co-lead author of the study.

¹ Alcalá N, Mangiante L, Le-Stang N, Gustafson CE, Boyault S, Damiola F, et al. (2019). Redefining malignant pleural mesothelioma types as a continuum uncovers immune-vascular interactions. *EBioMedicine*. Published online 21 October 2019; <https://doi.org/10.1016/j.ebiom.2019.09.003>

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release e-mailing list, please write to com@iarc.fr.