

New IARC study provides insights into the characteristics of pulmonary carcinoids and identifies a new subtype, called supra-carcinoids

Lyon, France, 22 August 2019 – A new study on pulmonary carcinoids, a rare, understudied type of lung cancer that so far does not seem to be related to smoking, has been published in the journal *Nature Communications*.¹ Led by scientists from the International Agency for Research on Cancer (IARC) and partners, the study identified an aggressive new subtype of pulmonary carcinoids, called supra-carcinoids.

“Supra-carcinoids were identified using innovative sequencing technologies that provide information on the molecular characteristics of tumours,” says Dr Lynnette Fernandez-Cuesta, a scientist in the Genetic Cancer Susceptibility Group at IARC and a co-author of the study. “Patients with supra-carcinoids have worse overall survival (33% at 10 years) compared with patients with other pulmonary carcinoids (76% at 10 years).”

The study’s authors also developed a tool to distinguish carcinoid patients with favourable survival (88% at 10 years) from those with poor survival (27% at 10 years) using artificial intelligence algorithms informed by the generated molecular data.

The study enabled the researchers to create a molecular map of pulmonary carcinoids. Such a map can play a key role in personalized medicine. As the same innovative sequencing technologies start to be used for personalized medicine, this map would provide a reference to situate individual patients in the molecular landscape of pulmonary carcinoids.

“One can think about sequencing technologies as generating something like GPS coordinates, but having these coordinates without a map is not helpful,” says IARC scientist Dr Matthieu Foll, a co-author of the study. “We need a map to locate a patient in a region with similar molecular characteristics, and this will guide diagnosis, prognosis, and clinical management.”

The incidence of pulmonary carcinoids is increasing worldwide, especially at advanced stages, but little is known about the cause. Further studies are warranted. “This tool could play an important role in better guiding diagnosis and prognosis,” stresses Dr Fernandez-Cuesta. “This is particularly important for these tumours, and for rare cancers in general, because, when combined, they represent one quarter of all cancer cases, and they are usually understudied and neglected diseases with limited therapeutic opportunities.”

¹ Alcalá N, Leblay N, Gabriel AAG, Mangiante L, Hervas D, Giffon T, et al. (2019). Integrative and comparative genomic analyses identify clinically relevant pulmonary carcinoid groups and unveil the supra-carcinoids. *Nat Commun*. Published online 20 August 2019; <https://doi.org/10.1038/s41467-019-11276-9>.

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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 and 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 email list, please write to com@iarc.fr.