Immunotherapy is safe and feasible in cancer patients treated for HIV, study suggests

October 20 2018

Dr. Aurélien Gobert of Groupe Hospitalier Pitié Salpêtrière in Paris, France, study author. Credit: European Society for Medical Oncology

Immunotherapy has been a major breakthrough in oncology, with registered drugs now approved for use in an increasing number of

tumour types—but little is known about its safety for HIV-positive cancer patients. A study to be presented at the ESMO 2018 Congress in Munich has now provided data to suggest that treatment with PD-1/PD-L-1 immune checkpoint inhibitors, which target the very system affected by the HIV virus, is feasible in this patient population for whom cancer is currently one of the principal cause of mortality.

According to study author Dr. Aurelien Gobert of Groupe Hospitalier Pitie Salpetrire in Paris, France, there are about two million people living with HIV in Europe today. "These patients are at higher risk for a number of cancers: AIDS-defining forms, the diagnosis of which results in the categorisation of a person as suffering from AIDS, but also various other types that they are two to three times more likely to develop than in the general population, such as anal, skin, head and neck, and lung cancer," he explained. HIV-positive cancer patients are not represented in clinical drug trials, which select candidates with the lowest probability of suffering complications, so their responses to new therapies are not immediately known.

"The point of this study was to look at an HIV-positive patient cohort treated with immunotherapy in conjunction with a close monitoring of their viral load and CD4 lymphocyte count," said Gobert. "Viral load is the quantity of virus found in the bloodstream, and CD4 lymphocytes are the cells of the immune system that HIV targets. Both measures are indicators of the extent to which a person is affected by the virus: patients treated properly with antiretroviral therapy typically have a lymphocyte count of 350-500/mm3 and a viral load that is undetectable."

To assess the effects of the PD-1 inhibitor nivolumab in this population, cases presented in the multidisciplinary meetings of the national Cancer VIH network were evaluated. In addition to CD4 lymphocyte count and viral load, tolerance and efficacy information was retrospectively collected from patients treated with this drug, along with demographic

data. "Our study population was demographically homogenous, most patients being males around 60 years old," Gobert reported.

Out of the 20 patients evaluated, one (5%) had metastatic melanoma—the remaining 95% were treated for metastatic non small-cell lung cancer. Median lymphocyte count at diagnosis was 338.5/mm3. Viral load was undetectable in 17 patients, low in two cases and unknown in one person. At the time of the cut-off analysis, median follow-up was almost 11 months, and the median number of nivolumab infusions received was six (ranging from three to 53).

"We didn't see any toxic deaths or immune-related adverse events," Gobert reported. "One patient did experience a rising HIV viral load and decreasing CD4 lymphocyte count, indicating a reactivation of the virus, but this occurred following the interruption of his antiretroviral therapy." Of the 17 individuals in whom response could be assessed, a partial response was observed in four patients, while two had stable disease and the majority (eleven) had disease progression at the first evaluation.

"Although the response data is fairly consistent with results obtained with the same drug among other cancer patients, the size of our sample and the length of follow-up do not allow us to draw any conclusions regarding efficacy," Gobert cautioned. "We know that few patients respond to immunotherapy, but those who do respond for long periods of time and thus have significantly improved survival. This seems to have been the case for the melanoma patient in our cohort, but the study is too recent for us to quantify survival rates at this time."

"Our key insight then, is that the treatment appears to be well tolerated by HIV-positive cancer patients—so long as antiretroviral therapy is continued in parallel," Gobert concluded. "It speaks to the feasibility of immunotherapy in this patient population, which represents a significant proportion of cancer diagnoses, and among whom malignancies

accounted for more than a third of deaths in 2010. Going forward, this will need to be confirmed for various tumour types."

Commenting on this study for ESMO, Prof. John Haanen from the Netherlands Cancer Institute in Amsterdam, said: "This is a retrospective analysis of a relatively small cohort, which is nevertheless one of the largest so far presented, of HIV patients on antiretrovirals treated with immunotherapy for metastatic cancer. The results confirm those of other, smaller cohorts in showing that while on antiretroviral therapy, cancer patients living with HIV can safely receive anti-PD-1 treatment. The efficacy data also suggests that the overall response rate of HIV-positive patients seems to be similar to that of other cancer patients. These promising results need to be confirmed in larger studies—ideally, in a prospective clinical trial."

Provided by European Society for Medical Oncology