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Title: Increased incidence of Merkel cell polyoma virus in non-small-cell lung cancer

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Body: Introduction and aim of the study: Polyoma viruses such as BK virus (BKV), JC virus (JCV) and Merkel Cell Polyoma virus (McPyV) are typically non-oncogenic. The evidence for their role in human cancer remains controversial although they have been detected in a variety of human neoplasms. The aim of this study is to determine the incidence of the most common polyoma viruses in adults McPyV, BKV and JCV in a large non-small cell lung cancer (NSCLC) patient population. Methods: Real Time PCR and nested PCR were employed to assess the presence of BKV, MCPyV and JCV DNA in tissue biopsies from 100 patients with primary NSCLC as well as lung tissue specimens from macroscopically healthy sites of their lung. Results: BKV and JCV DNA were not detected in lung tissues biopsies or control specimens. However, ten specimens from lung cancer tissue were found positive for the presence of MCPyV DNA (10/100, 10%), whereas no control sample was tested positive for the virus. The MCPyV positive samples were obtained from male patients in 90% (9/10) of the cases, with a mean age of 64 years and the following histological types: adenocarcinoma 5/10 cases (50%), squamous cell carcinoma 3/10 cases (30%), bronchoalveolar carcinoma 1/10 cases (10%) and undifferentiated large cell lung carcinoma 1/10 cases (10%). Conclusion: The detected MCPyV prevalence in NSCLC may suggest a pathogenetic role of this virus in NSCLC of the lung. These results may implicate MCPyV mainly with lung adenocarcinoma, while providing evidence of the potential oncogenic role of this virus in NSCLC.