

## Making an impact in oncology treatment using individual patient data

### BACKGROUND:

Non-small-cell lung cancer (NSCLC) is the most common type of lung cancer, and the leading cause of cancer-related deaths globally. The most common risk factor for developing NSCLC is smoking, and five-year survival rates vary from 1% to 47% depending upon the severity of the disease. The treatment picture and survival rates for NSCLC have improved significantly with the emergence of immunotherapy, frequently in combination with other standard cancer treatments including surgery and chemotherapy.

### RESEARCHER QUESTION:

Dr. Ash Hopkins is a Senior Research Fellow and leads the Clinical Cancer Epidemiology Lab at Flinders University, Adelaide Australia. The Lab's primary research focus is "to deliver actionable



prediction strategies and breakthroughs that improve the lives of patients with cancer"; this is also the primary focus of the work that Dr. Hopkins and his colleagues carry out using the Vivli data repository. For this project, Dr. Hopkins' research group sought to collect individual patient data (IPD) from trial participants with NSCLC to evaluate the efficacy of atezolizumab. Atezolizumab is a monoclonal antibody, and a type of targeted therapy called an immune checkpoint inhibitor. Although it has been an effective tool in the treatment of NSCLC, there have been concerns that its efficacy may be limited by other interventions, such as antibiotics or proton pump inhibitors (PPIs), which may also be part of an individual patient's treatment program.

*"As a research group we've been very fortunate to leverage the ability to access data from the Vivli platform across multiple projects and settings."* - Dr. Ashley Hopkins

### FINDINGS

Findings from this research indicate that overall survival efficacy of atezolizumab was similar for patients regardless of whether they were also being treated with antibiotics. There are also indicators that efficacy was reduced for PPI users compared with PPI nonusers.

### IMPACT

This research has produced a publication in the Journal of Thoracic Oncology. Dr. Hopkins also talked to Vivli about key findings from the study, identifying associations to altered survival outcomes for patients using atezolizumab compared with those who were not. The results indicate that overall survival rates associated with atezolizumab use were similar for antibiotic users and nonusers, but that efficacy was reduced for PPI users compared with nonusers.

"I come from a perspective of being a pharmacist, which has led me on a journey and transition across the research," said Dr. Hopkins. "I still want to be able to provide patients with the best possible information about the medicines."

## RESEARCH PROCESS:

To answer the question of whether the efficacy of Atezolizumab in patients with advanced NSCLC was negatively affected by being taken in conjunction with antibiotic or PPIs, the research team was able to access IPD from five RCTs totaling 4,458 participants. Assessment focused on assessing atezolizumab efficacy for subgroups on the basis of antibiotic and PPI use at randomization. The team also explored possible associations between antibiotic and PPI use with pretreatment peripheral blood immunophenotype.

## NEXT STEPS:

READ MORE

[Efficacy of Atezolizumab in Patients With Advanced NSCLC Receiving Concomitant Antibiotic or Proton Pump Inhibitor Treatment: Pooled Analysis of Five Randomized Control Trials](#) (Journal of Thoracic Oncology)  
[Interview with Dr. Hopkins](#)

[Find out more about requesting data from Vivli.](#)