Impact of Novel Anti-Tumor Therapies on Mortality in Various Oncology Indications across EU5

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Background
• The burden of the four common cancers, i.e., lung, breast, colorectal, and prostate, has been gradually increasing globally
• In 2020, Lung cancer remained the leading cause of cancer death, with an estimated 1.8 million deaths (18%), followed by colorectal (9.4%), liver (8.3%), stomach (7.7%), and breast (6.9%) cancers
• Approximately 34 novel therapies targeting various pathways with different combinations gained EMA approval from the plethora of pipeline therapies in EUS over the last 10 years

Objectives
To assess the impact of innovation in anti-cancer therapies on overall mortality in Lung, Breast, Colorectal, and Prostate Cancer in the EUS (France, Germany, Italy, Spain, and the United Kingdom) from 2010 to 2020

Methodology
• Conducted secondary research to identify cancer mortality trends in EUS countries from 2010 to 2020
• EMA (European Medicines Agency) approved novel therapies targeting EGFR mutations, ALK mutations, ROS1 mutations, and PDL1 non- oncogenes/fusion proteins biomarkers were investigated
• Systematically analyzed the impact of novel therapies on cancer mortality and summarized the results
• Literature search is limited to publicly available English-language publications in EUS over the last 10 years

Findings
• Lung Cancer is the leading cause of cancer-related mortality in the EUS followed by Breast, Colorectal, and Prostate
• The age-standardized mortality rates of Lung, Breast, Colorectal, and Prostate Cancer in the EUS (2010) are 14.2, 15.4, 11.5, and 10.9, respectively, and in the EUS (2020), they are 21.6, 13.9, 10.7, and 8.9, respectively
• With the introduction of 34 therapies over the last 10 years, there was a significant decrease in the mortality of lung cancer by 10%, breast cancer by 10%, colorectal cancer by 8%, and prostate cancer by 18%
• However, no significant improvements in mortality were observed in France and Germany for lung and breast cancers – potentially due to delays in early diagnosis and initiation of therapy
• Among the EUS, Italy, Spain, and UK reported significant reductions in mortality (≥10%) for all the four cancers
• Among all cancers, Prostate cancer resulted in greater reductions in mortality (9-10%) compared to other three cancers
• But these novel therapies are highly expensive, and the predicted mean incremental anticancer drug cost increased from $33,447 in 2016 to $161,141 in 2015 (greater than five-fold increase)

Conclusion
With the innovation in oncology and the introduction of target-specific therapies, all the EUS countries reported a significant decrease in mortality over the last 10 years for all four cancers assessed. Although these novel therapies are relatively expensive whilst patient protected, they are lifesaving and increase the survival rates of the affected cancer patients.