Delivery Science Grants Program

Identifying Surgical Timing to Optimize Outcomes for Early-Stage Lung Cancer Surgery

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| Challenge | **National guidelines recommend large-scale lung cancer screening among at-risk patients and KPNC has instituted programs to fulfill this goal. However, the ideal time to surgery for early-stage lung cancer is unknown, including if currently recommended minimal diagnosis-to-surgery time recommendations accurately decrease the risk of stage progression.** |
| Existing Evidence | The time between lung cancer diagnosis by radiologic imaging and subsequent surgical resection varies widely. This variation is influenced by the need for additional work-up, patient preference, and operative scheduling. Few studies have evaluated if there is an optimal minimum time to surgery, beyond which there is an increased risk of recurrence or stage progression to inform patients, providers, and large-scale lung cancer screening programs. |
| Target Population | Stage I or II lung cancer patients aged 18 to 85 years undergoing elective surgery who had CT or PET imaging within six months prior to surgery |
| Intervention or Exposure | Time from last CT or PET scan to surgery (TTS) |
| **Outcomes/Key Findings** | Early-stage lung cancer patients with a time to surgery within 4 weeks experienced:  • lower rates of death (HR 1.18, 95% CI 1.00-1.39) and  • lower rates of cancer recurrence (HR 1.33, 95% CI 1.10-1.62). This suggests the maximum time to surgical resection after lung cancer diagnosis to optimize outcomes may be much shorter than previously recommended, though longer than current KPNC targets of within 2 weeks, which can be difficult to operationally achieve. |
| **Resulting Action/Change** | **Informed value-based care to not proceed with a planned large, complex intervention that would have required >10 pharmacist equivalent positions and complex coordination between pharmacy and adult & family medicine for full implementation.** |
| Additional Recommendations | Pragmatic trials prior to full implementation are feasible and have clear benefit in understanding effectiveness and to evaluate for potential unanticipated harms. |
| Implementation Tools | Drug protocols, medication discontinuation/continuation guidelines for disease-specific essential conditions, monitoring protocols/variables for adverse effects |
| Implementation Measurement | Drug protocols, medication discontinuation/continuation guidelines for disease-specific essential conditions, monitoring protocols/variables for adverse effects |
| Reference | <https://pubmed.ncbi.nlm.nih.gov/37428504/>  A graph of a patient's health  Description automatically generated with medium confidence |