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NEWS

Trends in Cancer Imaging by Indication, Care Setting, and Hospital Type During the COVID-19 Pandemic and Recovery

PURPOSE

The delivery of cancer care has been greatly affected by the COVID pandemic. We aim to investigate the effect of the pandemic on computed tomography (CT) imaging of cancer.

METHODS AND MATERIALS

Cancer-related CT exams were retrospectively analyzed during three periods of 2020: pre-COVID (1/5/20-3/14/20), COVID peak (3/15/20-5/2/20) and post-COVID peak (5/3/20-11/14/20). Volumes were assessed by 1) Imaging indication: cancer screening, initial workup, active cancer, surveillance; 2) Care setting: outpatient, inpatient, ED; 3) Hospital type: quaternary academic center (QAC), university-affiliated community hospital (UACH), sole community hospitals (SCHs).

RESULTS

During the COVID peak, a significant drop in CT volumes was observed (-42·2%, p<0·0001), with cancer screening, initial workup, active cancer and cancer surveillance experiencing declines by 81·7%, 54·8%, 30·7% and 44·7% respectively (p<0·0001). The emergency department (ED) was the only setting with stable cancer-related CT volumes. In the post-COVID peak period, CT volumes for cancer screening and for initial workup did not recover (-11·7%, p=0·037; -20·0%, p=0·031), with the outpatient setting particularly affected. CT volumes for active cancer recovered post-peak, but inconsistently across hospital types with the QAC experiencing a 9·4% decline (p=0·022) and the UACH a 41·5% increase (p<0·001). Outpatient CTs recovered during the postpeak period, but a shift in utilization away from the QAC (-8·7%, p=0·020) toward the UACH (+13·3%, p=0·013) was observed. Inpatient and ED-based cancer-related CTs increased post-peak (+20·0%, p=0·004 and +33·2%, p=0·009, respectively).

CONCLUSIONS

COVID severely impacted cancer imaging care. CTs for cancer screening and initial workup did not recover to pre-COVID levels well into 2020, a finding that suggests higher numbers of patients with advanced cancers may present in the future. A redistribution of imaging utilization away from the QAC and outpatient settings, toward the community hospitals and inpatient setting/ED was observed. The ED has remained a dependable healthcare delivery setting for patients with cancer throughout the pandemic.

CLINICAL RELEVANCE/APPLICATION:

COVID has severely impacted cancer care, but few studies have explored its effects on cancer imaging in the late months of 2020. This study examines cancer imaging utilization during the COVID pandemic through November 2020.