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| **Diagnostic Work-up of Lung Cancer Patients of the Top End Health Service (TEHS) of the Norther Territory (NT) between 2015-2020: A Retrospective Cohort Analysis.** |
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| **Introduction/Aim:**  Lung cancer remains the most common cause of cancer death in the NT and Australia wide. Poorer lung cancer survival outcomes have been demonstrated in the Aboriginal and Torres Strait Islander (ATSI) population of the Top End however explanation for this disparity is lacking. This retrospective analysis aims to explore the potential reasons for this discrepancy by evaluating the diagnostic work-up and treatment of lung cancer.  **Methods:**  Retrospective cohort study of adult patients being evaluated for lung cancer in the TEHS from January 2015 to end of December 2020. Alongside baseline demographics the stage at diagnosis (early vs late-stage disease) and treatment intent was included for analysis. Dates of diagnostic imaging, tissue biopsy and definitive management (surgery, chemo/radiotherapy, or palliative care) were extracted from digital records to establish the timeline of work-up. Median timeframes were calculated for the entire diagnostic work up to establish if any between group differences were evident using log-rank test for comparison.  **Results:**  392 patients were included in the final analysis of which 92 (23%) identified as ATSI and 300 were non-ATSI (77%). Median age of diagnosis was 61.5 years in the ATSI cohort and 67 years in the non-ATSI cohort. A higher proportion of the ATSI cohort were referred as an inpatient compared to the non-ATSI cohort (54% vs 46%). Later-stage disease at presentation was similar in the 2 cohorts (67% ATSI and 65% non-ATSI, p value = 0.79) with a trend towards non-curative treatment intent in the ATSI cohort however this wasn’t significant (71% vs 66%, p-value = 0.42). There was no significant difference in the median time from diagnostic CT to definitive treatment in the ATSI population compared to non-ATSI cohort (52 vs 60 days, p value = 0.71). Furthermore, no difference between ATSI vs non-ATSI cohort was seen in time between diagnostic CT to tissue diagnosis (21 vs 20 days) and tissue diagnosis to treatment (both groups 29 days).  **Conclusion:**  Indigenous patients of the TEHS experienced similar timeliness for diagnostic evaluation and treatment of lung cancer compared with non-Indigenous patients. The trend seen in this cohort towards non-curative treatment intent amongst Indigenous Australians may partially explain poorer survival outcomes however ongoing research into contributory factors is required.  **Grant Support:**  Division of Medicine Research Grant (Royal Darwin Hospital). |