# A RETROSPECTIVE CHART REVIEW OF LIMITED-STAGE-SMALL CELL LUNG CANCER PATIENTS TREATED WITH CONCURRENT CHEMORADIOTHERAPY

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## INTRODUCTION

- For patients with limited-stage-small cell lung cancer (SCLC), the optimal dose and timing of thoracic chemoradiotherapy (CRT) with the highest overall survival rate remains unresolved, though randomized trials favour concurrent accelerated radiotherapy.
- Current radiotherapy (RT) treatments include: 60 Gy/30 fractions over 6 weeks; 45 Gy/30 fractions over 3 weeks, or 40 Gy/15 fractions over 3 weeks.
- The potential benefit of our higher doses is that they result in better disease control. The potential drawback is delay in chemotherapy (CT) administration and prolonged toxicity.

## OBJECTIVE

To determine the prognosis of patients with limited stage SCLC undergoing different regimens of CRT to formulate the guidelines for thoracic RT treatment regimen.

## METHODS

- A retrospective observational cohort study with chart review of 159 patients receiving thoracic radiotherapy at the Allan Blair Cancer Centre.
- Inclusion criteria: age >18, limited-stage SCLC, treatment between 2010-2019
- Study variables: demographics, CT and RT initiation and completion dates, changes in dosage, and death.

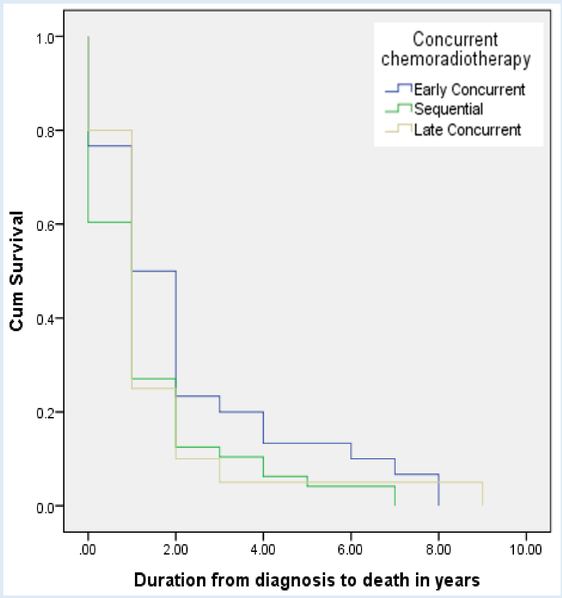
## STATISTICAL ANALYSIS

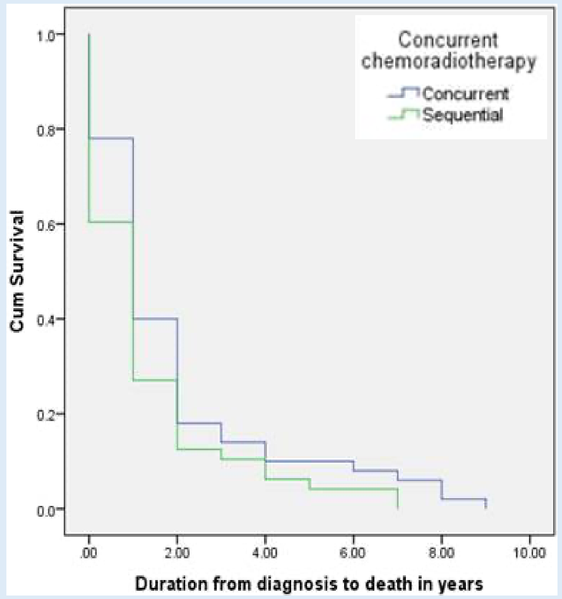
- The association between SCLC and clinical variables is determined by chi-squared test or Fisher's exact test.
- The Kaplan-Meier plots and log-rank test: to determine clinical outcomes of disease-free survival (DFS) and overall survival (OS).
- A multivariate Cox regression: evaluate the prognostic model associated with SCLC recurrence and survival.

## DATA AND RESULTS

**RT initiation concurrent or sequential to CT does not have any statistical significance in terms of overall survival.**

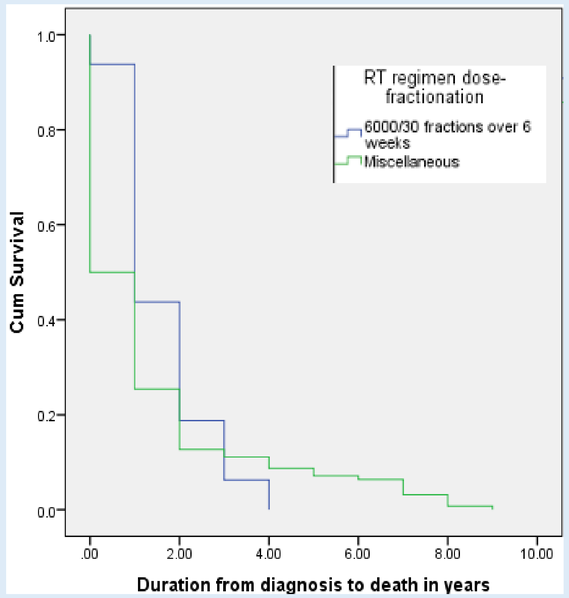
**The concurrent CRT results in 1.04 (95%CI: 0.53-1.44) times higher overall survival than sequential (p=0.84).**

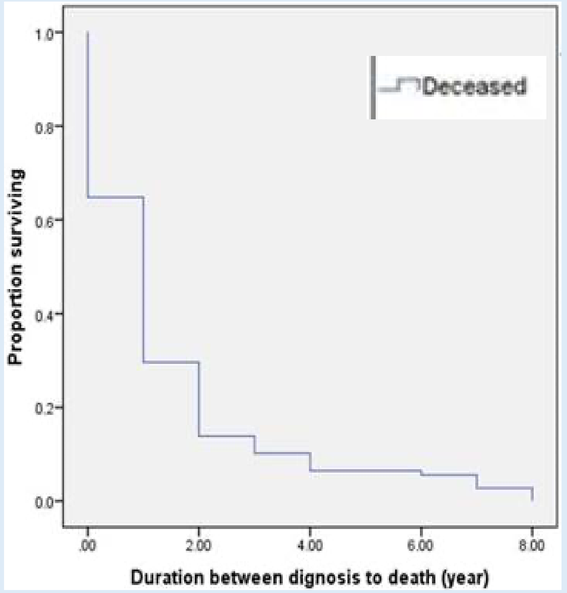



**Miscellaneous RT regimen is 7.94 (95%CI: 4.69-10.80) times more likely to result in longer survival than 6/30 fractions over 6 weeks (p <0.001*).**

**The two- and five-year survival rate is less than 10% of patient population from their date of diagnosis.**




## OTHER FINDINGS

- There is no evidence that RT dose fractionation affects overall survival.
- Patients receiving radiotherapy were 1.55 (95% CI: 1.13-1.61) times more likely to have higher survival (p= 0.01*)
- The RT duration of greater than 5 weeks had a 66% (95% CI: 24%-71%) lower survival chance (p-value<0.001*).
- Patients receiving PCI were 1.47 (95% CI: 1.39-2.03) more likely to have improved/longer survival (p = 0.03*).
- The age of diagnosis did not have statistical significance on patient survival duration since diagnosis.
- While the two- and five-year survival rate was lower in this study compared to randomized clinical trials, it might resemble real world outcomes.

## CONCLUSION

- This study does not find any statistical significance regarding radiotherapy administration time that improves overall survival.
- There is no specific radiotherapy regimen found to be superior in terms of overall survival.
- Further research to study accelerated radiotherapy with a larger sample size involving a multicenter setting is warranted.

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