

Background

- JBR.10 was a randomized controlled trial of adjuvant chemotherapy using cisplatin and vinorelbine vs. observation in patients with completely resected (Stages IB and II) non-small cell lung cancer (NSCLC)¹
- A significant proportion of patients with completely resected NSCLC are either not referred for or decline adjuvant chemotherapy²
- Clearly some patients are willing to trade off some degree of survival improvement for perceived better quality of life
- **Aim:** To investigate how adjuvant chemotherapy affects quality-adjusted survival in patients with completely resected NSCLC using the JBR.10 database

¹Winton T, et al.: N Engl J Med 23:2589-97,2005 ; ² Kassam F, et al.: Journal of Thoracic Oncology 2:39-43, 2007

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Q-TWiST method

- TOX = Time with **T**oxicity
- TWiST = **T**ime **W**ithout **S**ymptoms of disease and **T**oxicity of treatment
- REL = Time spent in **R**elapse
- Unadjusted survival = TOX + TWiST + REL
- Quality of life adjusted survival = sum of utility for health state x time spent in health state, or:

$$u_{\text{TOX}} * \text{TOX} + u_{\text{TWiST}} * \text{TWiST} + u_{\text{REL}} * \text{REL}$$



2



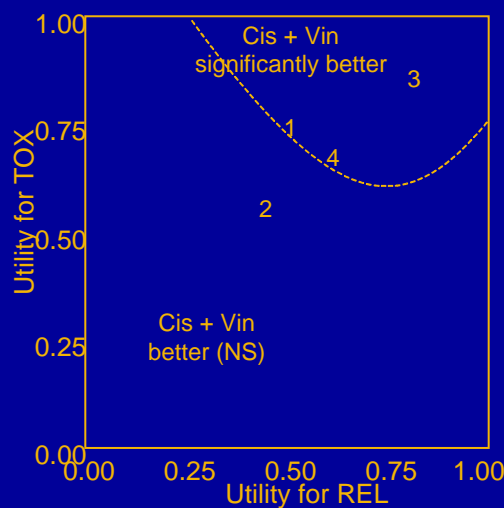
Utility Calculation: u_{TOX} , u_{TWiST} , u_{REL}

- **Method 1:** utility weights from literature, $u_{TOX}=0.75$, $u_{REL}=0.5$, and $u_{TWiST}=1$
- **Methods 2 and 3:** utility derived from summed aggregates of EORTC QLQ C30 scores (global and symptoms questions), from JBR.10 trial (N=186 chemotherapy, N=173 observation).
- **Method 4:** utilities derived from early stage, completely resected NSCLC (non-trial) patients at the Princess Margaret Hospital in 2007 using the EQ-5D questionnaire. The sample size was 70, and discounting was used, 10% for u_{TOX} , and 20% for u_{REL} .

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Results



Threshold utility analysis with a 95% confidence interval

The dashed line shows the 95% confidence interval threshold for which the chemotherapy has a significantly higher Q-TWiST

1: Predefined utility values

Δ Q-TWiST = 6 mths (p=0.029)

2: Utilities from global questions QLQ-C30

Δ Q-TWiST = 5 mths (p=0.072)

3: Utilities from symptom questions QLQ-C30

Δ Q-TWiST = 6 mths (p=0.008)

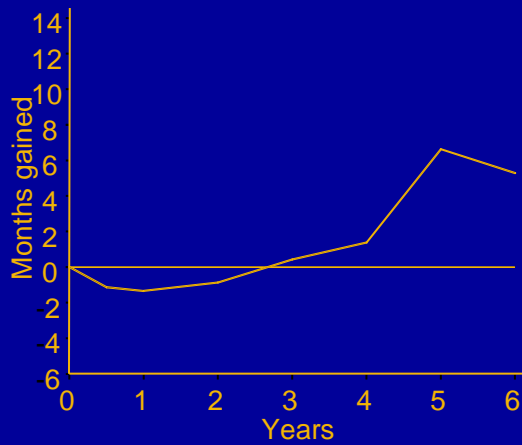
4: Utilities from EQ-5D Index Score

Δ Q-TWiST = 5 mths (p=0.003)

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Gain function of chemotherapy over observation (Method 2 shown: global questions QLQ-C30)



Conclusions

Adjuvant chemotherapy in early stage NSCLC improves mean quality-adjusted survival by a range of 5-6 months despite chemotherapy toxicity.

Due to chemotherapy toxicity, patients may have a slightly lower quality of life adjusted survival for the first 2 or 3 years.

