



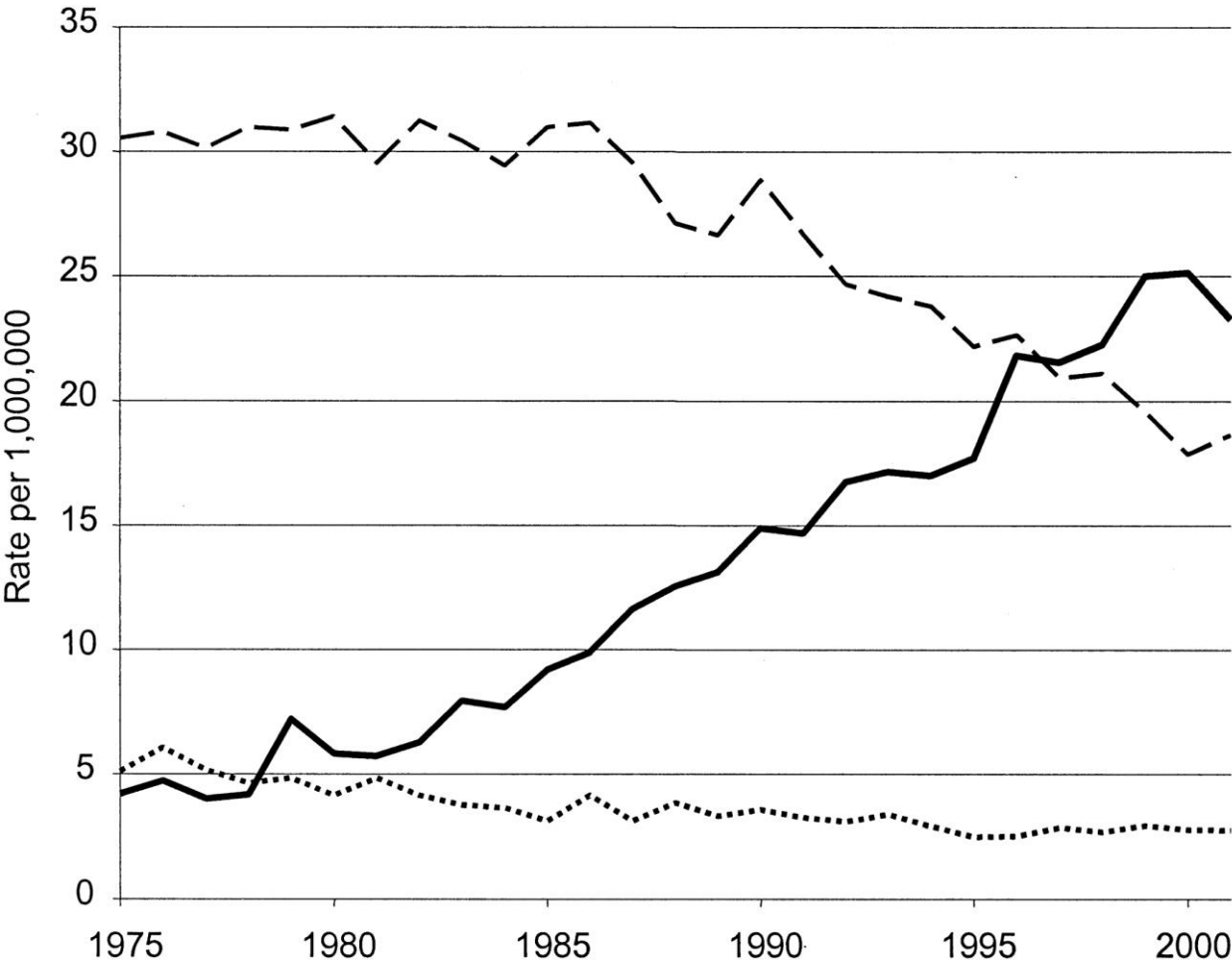
*Safety and Outcomes after Oesophagectomy in  
Southern New Zealand: A Twenty-Five Year  
Audit of a Low Volume Centre*

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# Safety and outcomes after oesophagectomy in Southern New Zealand: A twenty-five year audit of a low volume centre

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# International Trend



**Oesophageal adenocarcinoma** ↑

**Oesophageal Squamous cell carcinoma**

International guidelines towards oesophagectomy in high volume centres

Pohl H , Welch H G JNCI J Natl Cancer Inst 2005;97:142-146

- On average, 63 oesophagectomies per year in New Zealand
  - Waitemata District Health board: 38 oesophagectomies over 5-year period from 2010 to 2014
- International recommendation:
  - >20 oesophagectomies per year per centre
  - (Dutch Society of Surgery 2011; Germany)

# Aim

To establish if:

- 1) Technical outcomes after oesophagectomy for all indications and;
- 2) Oncologic outcomes for cancer cases

are acceptable when benchmarked against national and international results

# Method

- Prospective data
  - Otago Clinical Audit
- Retrospective analysis
- Statistical analysis using R (4.0.0)



# Outcomes

- Primary
  - Disease specific survival  
(Analysed by time, resection margin, TNM Staging)
- Secondary outcomes
  - Mortality and morbidity of oesophagectomy
  - Clavien-Dindo Grade 3 or higher = severe complication

# Results

January 1995 – December 2019  
108 Oesophagectomy

99 Malignancy

6 Barrett's  
oesophagus with  
high grade dysplasia

1 multiple  
oesophageal  
diverticula

1 Oesophageal  
perforation

1 SCC Larynx



# Demographics

	Southern New Zealand (n=108)	Esophageal Complications Consensus Group (ECCG) (n=2703)
Male : Female (%)	85 : 15	78 : 22
Age >60 years old (%)	57.7	62.9
ASA 1	16%	15%
ASA 2	50%	46%
ASA 3	32%	37%
ASA 4	0%	2%

# Operative details

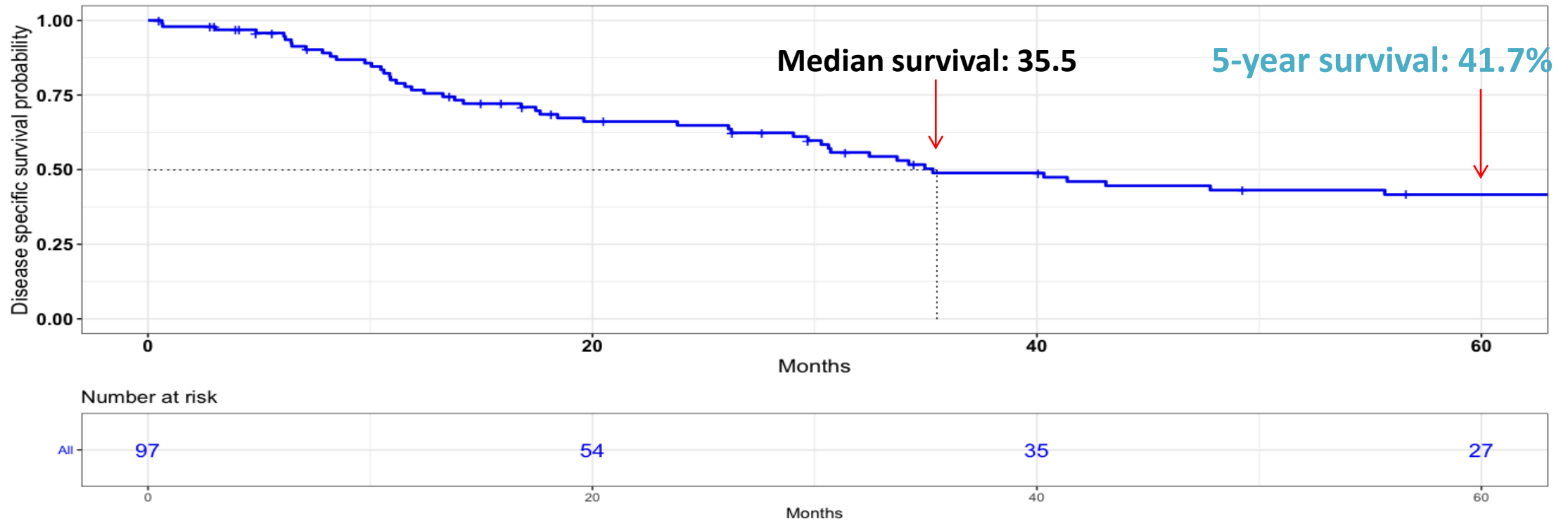
Procedure	
Ivor Lewis oesophagectomy	75 (69.4%)
Transhiatal oesophagectomy	29 (26.9%)
Extended total gastrectomy (thoracoabdominal)	2 (1.8%)
Resection not completed (unresectable)	2 (1.8%)
Procedure duration (min, including anaesthesia)	425 minutes (240 – 600)

Complications	Southern New Zealand (n=108)	Esophageal Complications Consensus Group (ECCG) (n=2703)
<b>In Hospital Mortality</b>	<b>2 (1.8%)</b>	
<b>90-day mortality</b>	<b>2 (1.8%)</b>	<b>121 (4.5%)</b>
<b>Clavien -Dindo <math>\geq</math> IIIb (Return to theatre)</b>	<b>14 (12.9%)</b>	<b>455 (17.2%)</b>
Respiratory	49 (45%)	
Wound	14 (13%)	
Clinical anastomotic leak	6 (5.5%)	301 (11.4%)
Chylothorax	5 (4.6%)	126 (4.7%)
Recurrent Laryngeal Nerve Injury	4 (3.7%)	109 (4.2%)
Anastomotic stricture requiring dilatation	4 (3.7%)	
Length of Stay: Median (days)	14 (4-94) days	

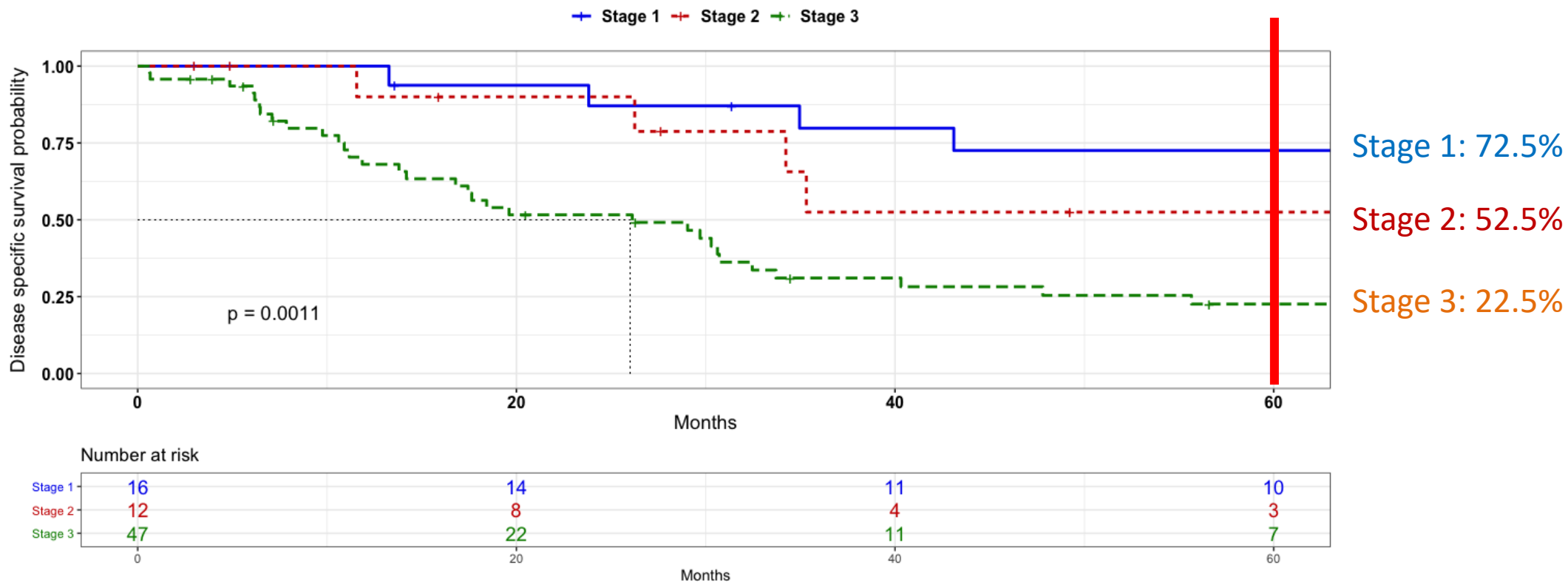
Histology	N = 97
Adenocarcinoma	88 (91%)
Squamous cell carcinoma	8 (8%)
Adenosquamous carcinoma	1 (1%)

Neoadjuvant therapy	N = 97
Neoadjuvant therapy in all forms	73 (76%)
Grade 0 and 1 response	24 (32.8%)

# Disease Specific Survival for Resected Oesophageal Cancer 1995-2019

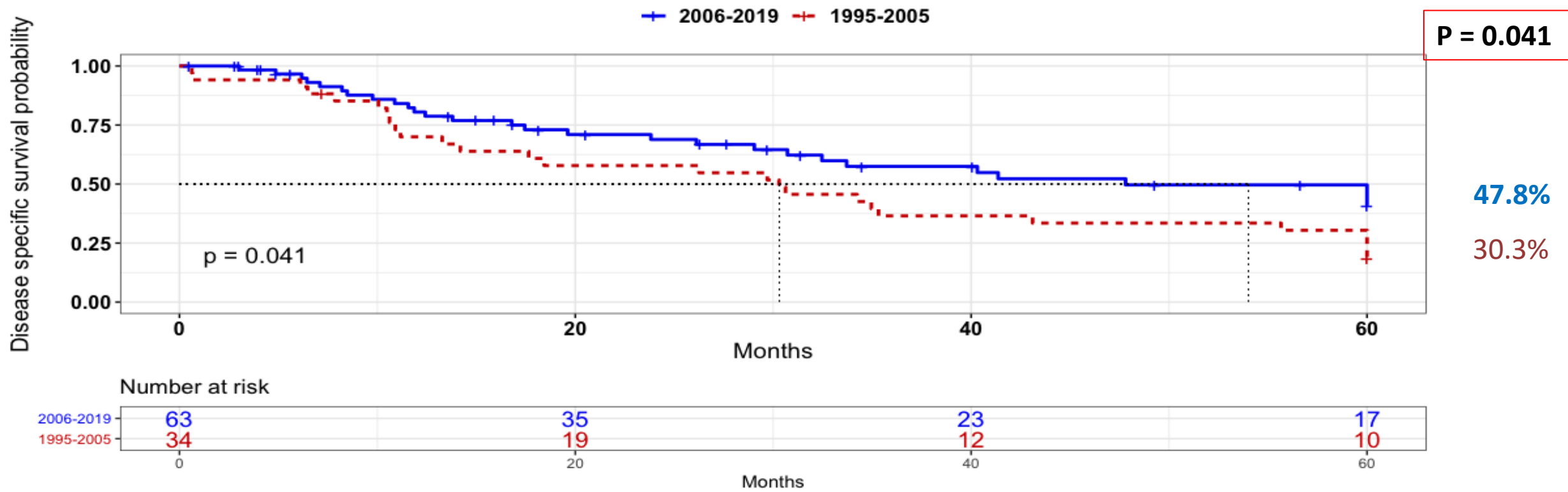


# Disease Specific Survival for Resected Oesophageal Cancer 1995-2019 Stratified by p/yp TNM stage

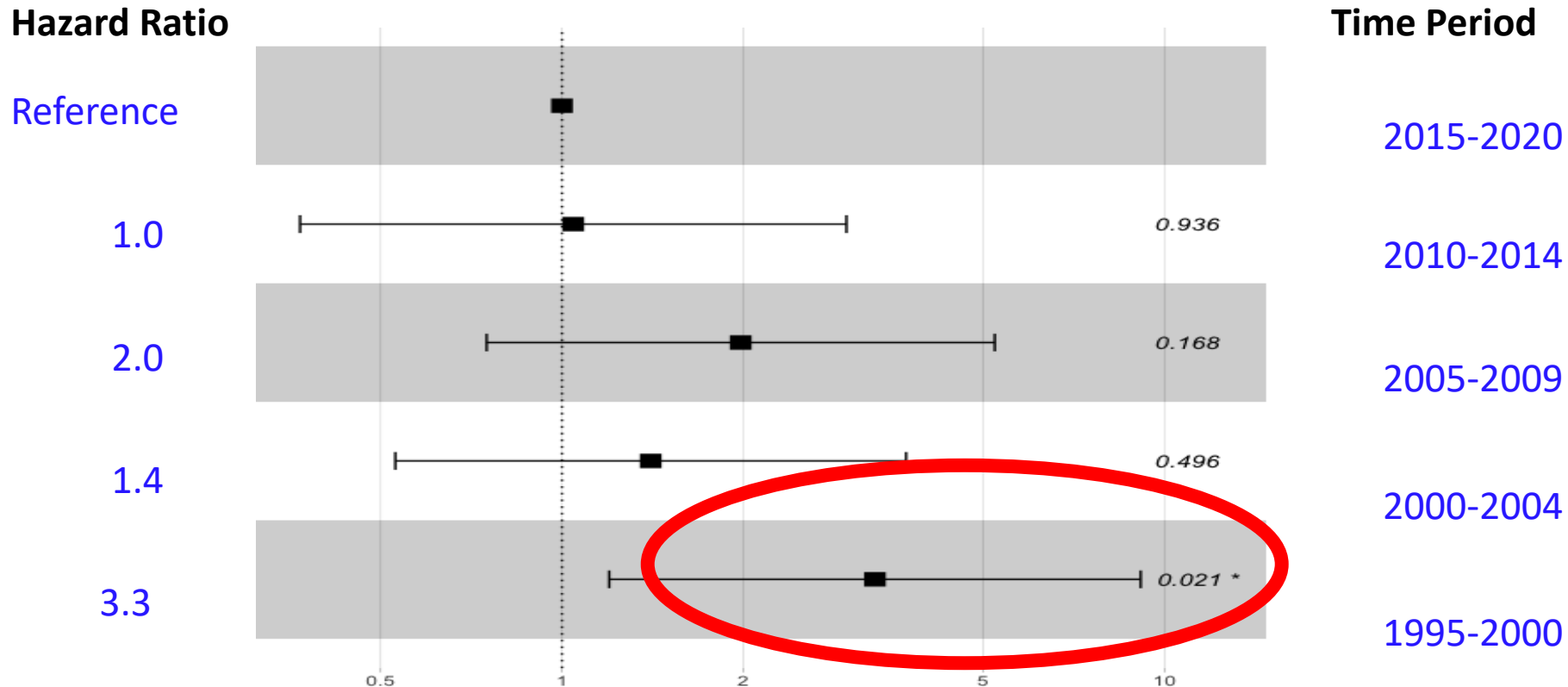




# Figure 2. Disease Specific Five-Year Survival for Resected Oesophageal Cancer 1995-2019 Stratified by Time Period

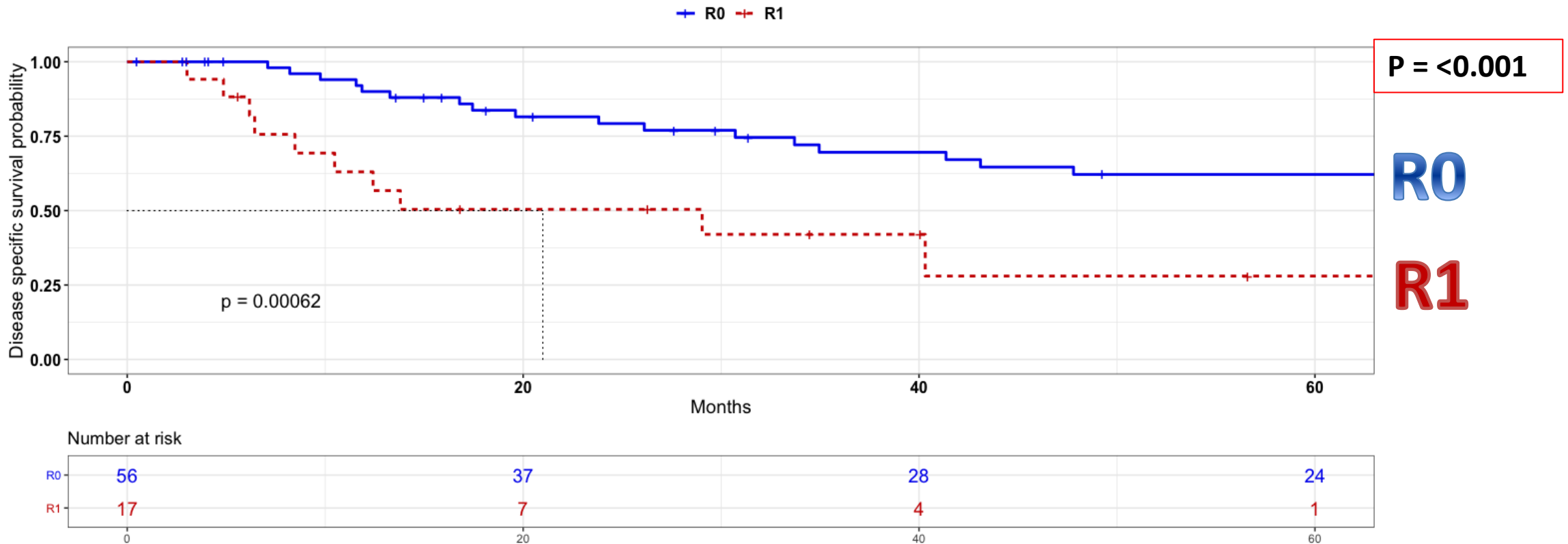


# Forest plot showing Hazard Ratios of disease specific mortality according to five year time period.



Resection Margin	
Not recorded	24
R0	56/73 (76.7%)
R1	17/73 (23.3%)

# Disease Specific Survival for Resected Oesophageal Cancer 1995-2019 Stratified by Margin Status



# Resection margin

- R1 = 23.3% (<1mm from inked margin)
- Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland, circumferential margin positivity should be <30%
- Neoadjuvant chemoradiotherapy associated with a higher R0 rate in international literature

# Adjuncts to safe surgery

- Australasian level 3 ICU
- Cardiothoracic surgery unit
- 24-hour interventional radiology service
- On-site medical and radiation oncology service
- Multidisciplinary meeting
- Upper gastrointestinal surgeon performing other complex UGI procedures in addition to oesophagectomy



# Conclusion

Perioperative morbidity, mortality, and survival are comparable to those achieved by international high-volume centres

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- Patients

