

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Surgery during holiday periods and prognosis in oesophageal cancer – a population-based nationwide Swedish cohort study
<b>AUTHORS</b>	Markar, Sheraz; Wahlin, Karl; Mattsson, Fredrik; Lagergren, Pernilla; Lagergren, Jesper

### VERSION 1 - REVIEW

<b>REVIEWER</b>	David Chan University Hospital of Wales, Cardiff, Wales, United Kingdom
<b>REVIEW RETURNED</b>	05-Jul-2016

<b>GENERAL COMMENTS</b>	<p>This is a well written population-based observational study of over 1800 patients who had undergone oesophagectomy for cancer over a 23 year period with good follow-up data. The authors aimed to determine if surgery performed during holiday periods influenced both short and long-term mortality. Despite a higher proportion of patients with more comorbidities operated on during the holiday periods, there were no significant differences in the outcomes in both groups even after controlling for the numerous confounding factors.</p> <p>This is an important and timely piece of work which supports major surgery being performed during the holiday periods on the caveat that there is adequate cover by experienced surgeons.</p> <p>One issue of concern is the particularly high overall all-cause 90-day postoperative mortality rate of 11.4% especially when compared to 3.2% in the UK (NOGCA report 2013)[1]. Most units performing high volumes of oesophagectomy report 90-day mortality rates of between 2-5% [2,3]. Can the authors address and explain this relatively high 90-day mortality rate?</p> <p>References</p> <ol style="list-style-type: none"> <li>1. National Oesophagogastric Cancer Audit 2013; <a href="http://www.hscic.gov.uk/catalogue/PUB11093/clin-audi-supp-prog-oeso-gast-2013-rep.pdf">http://www.hscic.gov.uk/catalogue/PUB11093/clin-audi-supp-prog-oeso-gast-2013-rep.pdf</a>.</li> <li>2. B. Dent, S. M. Griffin, R. Jones, S. Wahed, A. Immanuel, N. Hayes. Management and outcomes of anastomotic leaks after oesophagectomy. <i>BJS</i> 2016;103:1033-1038.</li> <li>3. In H, Palis BE, Merkow RP, Posner MC, Ferguson MK, Winchester DP, Pezzi CM. Doubling of 30-Day Mortality by 90 Days After Esophagectomy: A Critical Measure of Outcomes for Quality Improvement. <i>Ann Surg.</i> 2016;263:286-91</li> </ol>
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<b>REVIEWER</b>	Michael Schweigert Klinikum Dresden Germany
<b>REVIEW RETURNED</b>	18-Jul-2016

<b>GENERAL COMMENTS</b>	<p>I firstly want to thank you for the opportunity of reviewing this interesting article, performed by a highly experienced center in esophageal surgery.</p> <p>I want to congratulate the authors for the presented paper, which deals with the challenging area of esophageal surgery and its complications. The clinical prognostic markers in this area have been extensively studied in the last years, but we certainly have to identify other factors which reasonably seem to influence prognosis. These frequently forgotten factors relate to economical and organizational issues, an area of much interest in our global actual world.</p> <p>I also want to highlight the population-based nature of the study, based on the Swedish Cancer Registry, which provides us a clear view of the country's reality.</p> <p>There are, however, some suggestions I would leave, which the authors could try to address in a future study. First, it would be of great value, with such an enormous experience in esophageal cancer surgery, to address other outcomes besides mortality, namely morbidity, length of stay or need for transference to other hospitals. Considering esophageal surgery, these are outcomes of extreme value, which clearly show the complexity of esophageal cancer treatment. Second, I would like to ask the authors, what really would be the conclusions, if the study showed a worse prognosis of the patients operated during holiday periods – which structural changes would you suggest in practice?</p> <p>Finally, I really want to express my compliments to the authors of the article, for pursuing investigating such organizational factors, which far beyond medical issues might influence the outcome of this complex and challenging surgical intervention.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name  
David Chan

Please leave your comments for the authors below

This is a well written population-based observational study of over 1800 patients who had undergone oesophagectomy for cancer over a 23 year period with good follow-up data. The authors aimed to determine if surgery performed during holiday periods influenced both short and long-term mortality. Despite a higher proportion of patients with more comorbidities operated on during the holiday periods, there were no significant differences in the outcomes in both groups even after controlling for the numerous confounding factors.

This is an important and timely piece of work which supports major surgery being performed during the holiday periods on the caveat that there is adequate cover by experienced surgeons.

One issue of concern is the particularly high overall all-cause 90-day postoperative mortality rate of 11.4% especially when compared to 3.2% in the UK (NOGCA report 2013)[1]. Most units performing high volumes of oesophagectomy report 90-day mortality rates of between 2-5% [2,3]. Can the authors address and explain this relatively high 90-day mortality rate?

**RESPONSE:** This difference in mortality is due to two main factors:

1. The study period started already in 1987 to ensure adequate follow-up for the long-term survival analysis. During the earlier period of this study the postoperative mortality was clearly higher than

during the later period. However time was included as a covariate in the regression analyses to ensure it was accounted for in the results from this study.

2. The NOGCA audit and other publications alluded to, describe practice within centralised cancer systems or high volume centres. In Sweden there was no formal policy for the centralisation of oesophageal cancer surgery during the study period.

We have added to the discussion to reflect the need for study in alternative populations with alternative healthcare setups [page 13 line 9].

#### References

1. National Oesophagogastric Cancer Audit 2013; <http://www.hscic.gov.uk/catalogue/PUB11093/clin-audi-supp-prog-oeso-gast-2013-rep.pdf>.
2. B. Dent, S. M. Griffin, R. Jones, S. Wahed, A. Immanuel, N. Hayes. Management and outcomes of anastomotic leaks after oesophagectomy. *BJS* 2016;103:1033-1038.
3. In H, Palis BE, Merkow RP, Posner MC, Ferguson MK, Winchester DP, Pezzi CM. Doubling of 30-Day Mortality by 90 Days After Esophagectomy: A Critical Measure of Outcomes for Quality Improvement. *Ann Surg.* 2016;263:286-91

Reviewer: 2

Reviewer Name

Michael Schweigert

Institution and Country

Klinikum Dresden

Germany

Please state any competing interests or state 'None declared':

None declared.

Please leave your comments for the authors below

Dear editor, dear authors,

I firstly want to thank you for the opportunity of reviewing this interesting article, performed by a highly experienced center in esophageal surgery.

I want to congratulate the authors for the presented paper, which deals with the challenging area of esophageal surgery and its complications. The clinical prognostic markers in this area have been extensively studied in the last years, but we certainly have to identify other factors which reasonably seem to influence prognosis. These frequently forgotten factors relate to economical and organizational issues, an area of much interest in our global actual world.

I also want to highlight the population-based nature of the study, based on the Swedish Cancer Registry, which provides us a clear view of the country's reality.

There are, however, some suggestions I would leave, which the authors could try to address in a future study. First, it would be of great value, with such an enormous experience in esophageal cancer surgery, to address other outcomes besides mortality, namely morbidity, length of stay or need for transference to other hospitals. Considering esophageal surgery, these are outcomes of extreme value, which clearly show the complexity of esophageal cancer treatment.

RESPONSE: We agree with your point that further outcomes would be of interest to evaluate in future follow-up studies. We have added to the discussion to reflect this point [page 13 line 10].

Second, I would like to ask the authors, what really would be the conclusions, if the study showed a worse prognosis of the patients operated during holiday periods – which structural changes would you

suggest in practice?

RESPONSE: If we had shown a change in prognosis, it may be argued that in a similar manner to weekday influencing outcome from surgery publications have led to introduction of a seven-day consultant or attending working week. A similar strategy could be employed in holiday period with greater senior surgical staffing levels during this time in order to improve outcome. However we have shown no influence of holiday period upon prognosis from oesophagectomy, therefore no such recommendation is made.

Finally, I really want to express my compliments to the authors of the article, for pursuing investigating such organizational factors, which far beyond medical issues might influence the outcome of this complex and challenging surgical intervention.