

Pattern of comorbidities among Colorectal Cancer Patients and impact on treatment and short-term survival

Daniel Redondo-Sánchez^{1,2,3}, María José Sánchez^{1,2,3}, Miguel Rodríguez-Barranco^{1,2,3},

M^a Carmen Carmona-García^{4,5,6}, Rafael Marcos-Gragera^{4,6}, Miguel Angel Luque-Fernandez^{1,2,3,*}

1. Biomedical Research Institute of Granada, University of Granada
2. Granada Cancer Registry, Andalusian School of Public Health
3. CIBER of Epidemiology and Public Health
4. Catalan Institute of Oncology
5. University Hospital Dr Josep Trueta of Girona
6. Descriptive Epidemiology, Genetics and Cancer Prevention of the Biomedical Research Institute of Girona, University of Girona

* Corresponding author:
miquel.luque.easp@juntadeandalucia.es

INTRODUCTION

Colorectal cancer (CRC) is the most frequently diagnosed cancer in Spain (44,937 cases in 2019), but there is little evidence regarding the pattern and impact of comorbidities on cancer patients. The objective of this study is to describe the pattern of comorbidities and to investigate the extent to which comorbidities influence time to surgery in Spain.

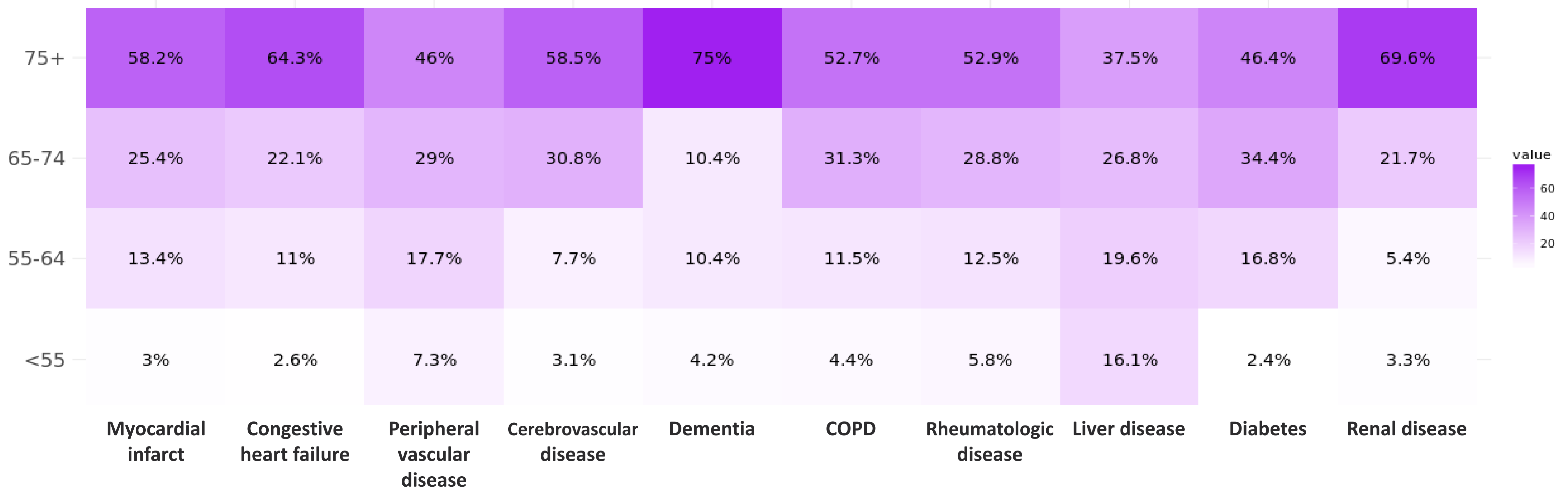
METHODS

We developed a population-based high-resolution cohort study, including all CRC cases in Granada and Girona diagnosed in 2011 (1,061 cases). Data were drawn from two cancer registries and hospital digital medical records. Comorbidities were previous to the cancer diagnosis (at least 6 months). We describe the pattern of comorbidities by patient, tumor and healthcare factors using radar-plots and heatmaps. Then, we used nonparametric methods to study the impact of comorbidities on time to surgical treatment. Finally, we developed an open-source web app: watzilei.com/shiny/CoMCoR/

RESULTS

The most common comorbidities were diabetes (23.6%), COPD (17.2%) and congestive heart failure (14.5%). Dementia was the most common comorbidity among older patients (75+ years) showing a higher proportion (30%) of late cancer diagnosis (stage IV) and the highest prevalence of diagnosis at emergency room.

Figure 1. Pattern of comorbidities by age group.



The mean time from diagnosis to surgical treatment was 55 days (SD: 66) ranging between 0 (min) and 587 (max) days. Overall, patients with 2 comorbidities or more had an increased time to surgery of 17 days, 95%CI 12-34. However, patients aged 75+ years having 2 comorbidities showed a higher prevalence of emergency hospital admission followed by surgery the same day or the day after admission (37%). Overall, the presence of 2+ comorbidities increased two-times the risk of short-term mortality one-year after diagnosis.

Figure 2. Pattern of comorbidities by sex.

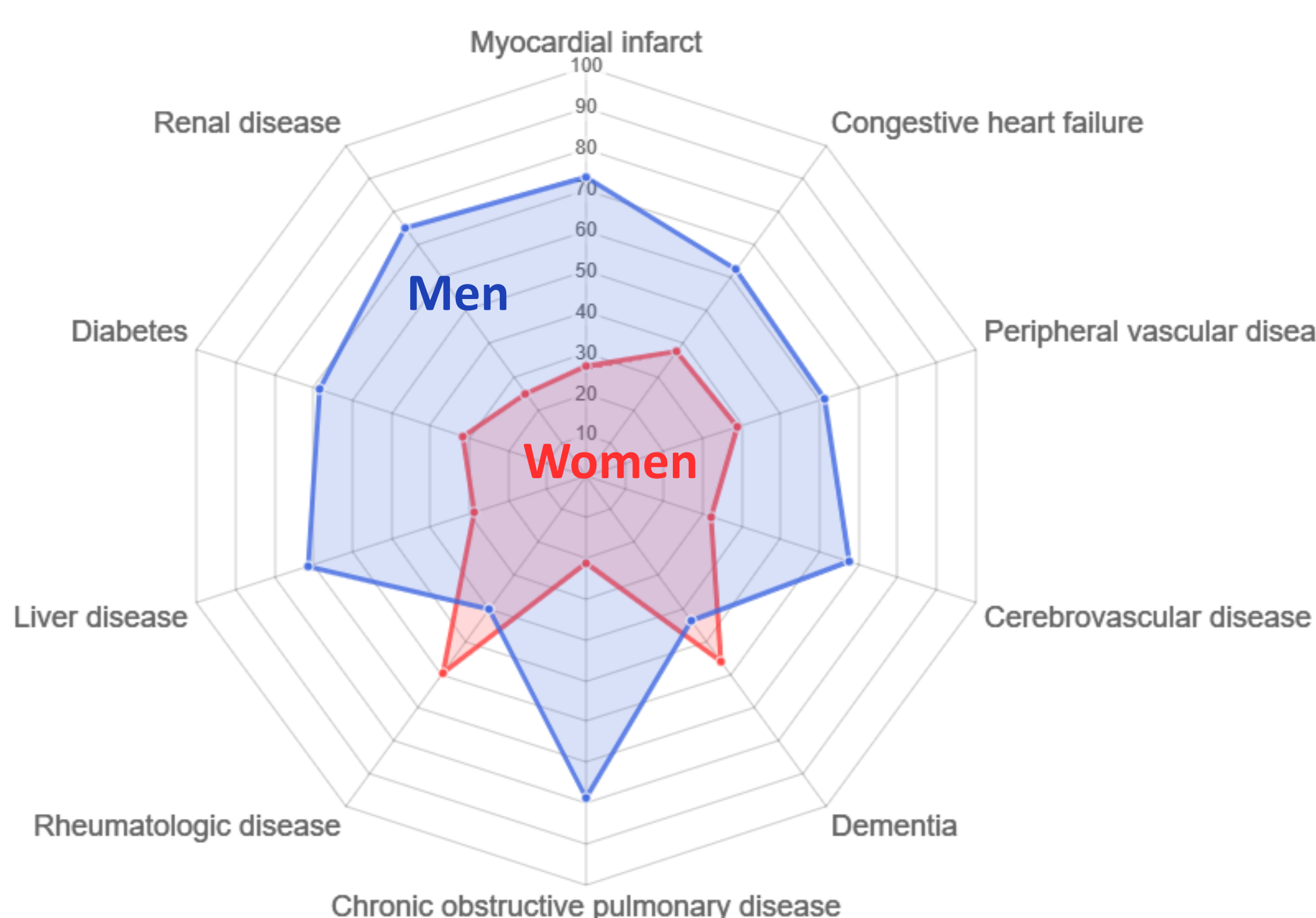
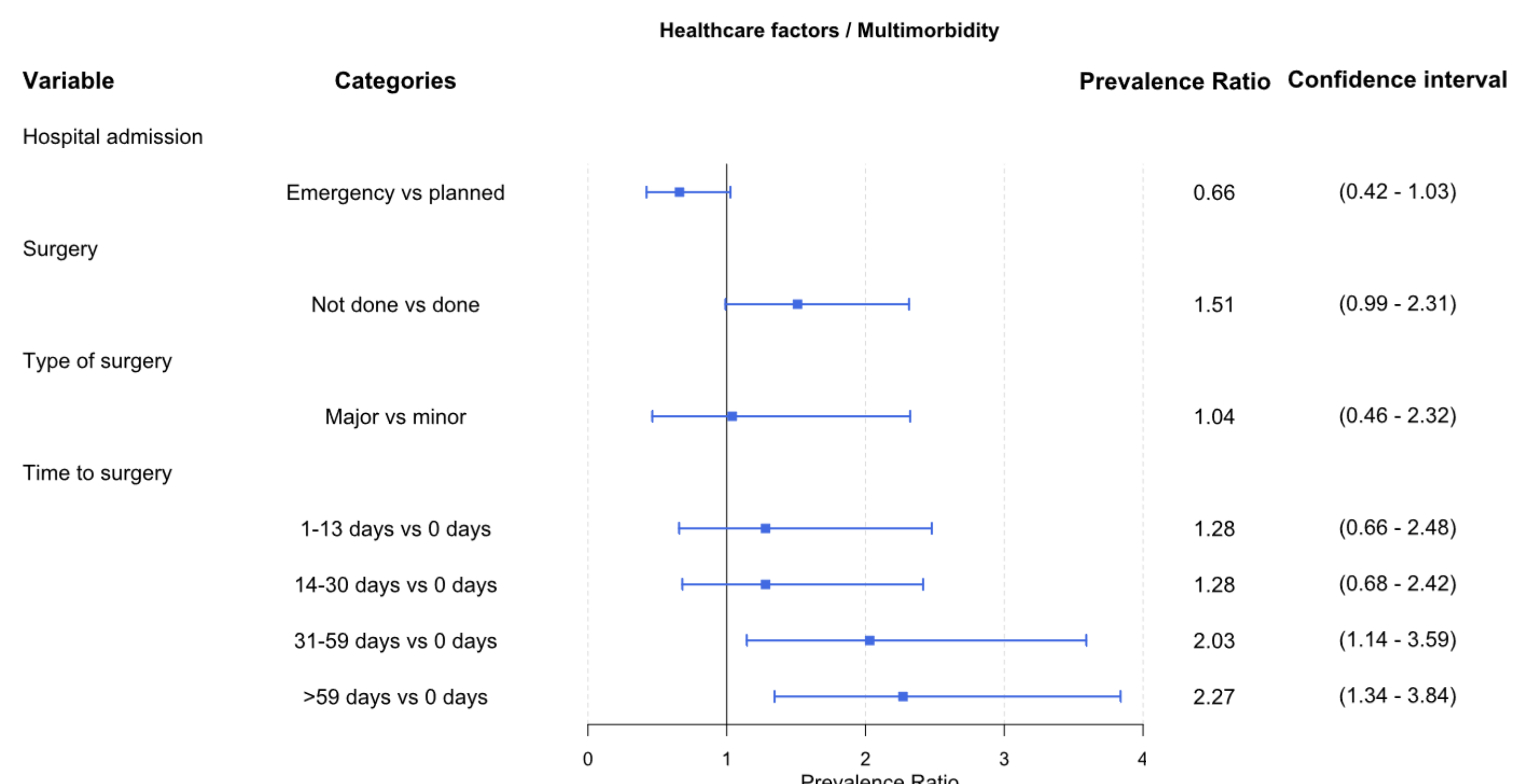


Figure 3. Prevalence ratio of multimorbidity by healthcare factors, and confidence interval (95%).



CONCLUSIONS

Results from our study allow identifying patterns in the frequency and distribution of comorbidities among CRC patients and their impact on time from diagnosis to surgical treatment. The study web application is meant to serve as a scientific tool supporting evidence-based policymaking to improve CRC patients' outcomes.