



Survival of non-muscle-invasive bladder cancer in Germany by tumor stage and grade

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BACKGROUND

According to the guidelines of the European Association of Urology (EAU), non-muscle-invasive bladder cancer (NMIBC) includes T1, in situ (Tis) and non-invasive papillary tumors (Ta). NMIBC can be stratified into three groups based on the tumor's risk of recurrence and progression [Tab. 1]. Treatment recommendations vary between the risk groups [1].

Table 1: Risk groups according to EAU Guidelines [1]

Low-risk tumors	Primary, solitary, Ta, G1 (low grade), < 3 cm, no CIS
Intermediate-risk tumors	All tumors not defined in the two adjacent categories (between the category of low and high risk)
High-risk tumors	Any of the following: <ul style="list-style-type: none"> ➤ T1 tumor ➤ G3 (high grade) tumor ➤ CIS ➤ Multiple and recurrent and large (> 3 cm) Ta G1G2 tumors (all conditions must be present)

METHOD

Using the population-based cancer registry data pooled from nine German federal states and one administrative district, we included patients (aged 15 years or older) who were first diagnosed with NMIBC between 1998 and 2012 and classified them into the three risk groups. Ta tumors were stratified using only the grading variable, as the size in cm was missing in the dataset and multiplicity was approximated by topography code C67.8 (overlapping lesion of bladder). We derived period survival estimates for 2008–2012 for 66,106 included patients, who were still alive at the beginning of 2008. We calculated relative survival rates for up to ten years by tumor stage, grading and gender.

RESULTS

Relative survival for patients with NMIBC differed between the three risk groups and 10-year rates ranged from 71% (high-risk tumors) to 94% (low-risk tumors) [Fig. 1]. Relative survival varied also within the high-risk group by stage and grade of tumor. Female patients with stage Ta had a better relative survival compared to male patients. Worst prognosis was associated with T1G3 for both sexes [Fig. 2].

Figure 1: Relative survival by risk group

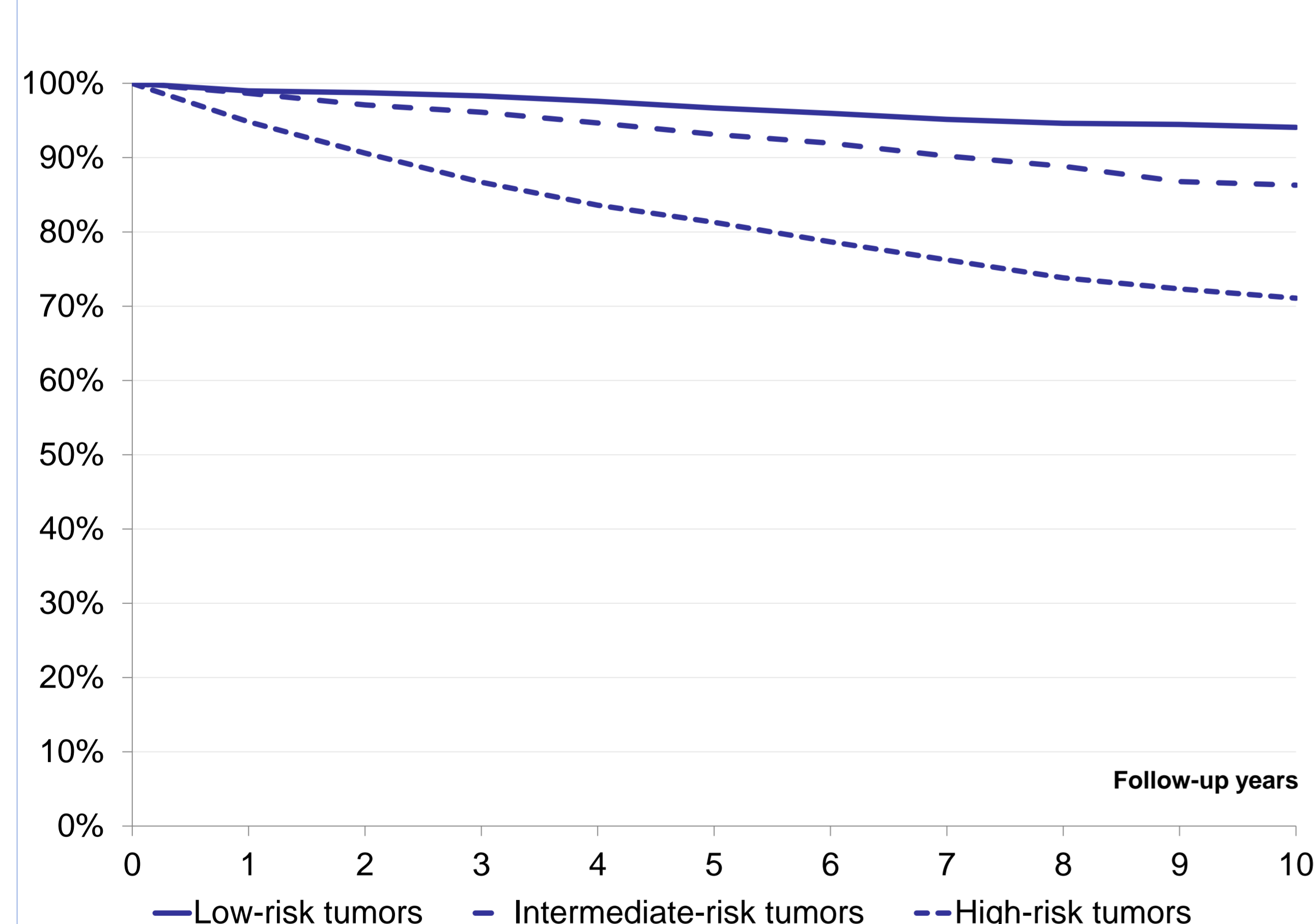
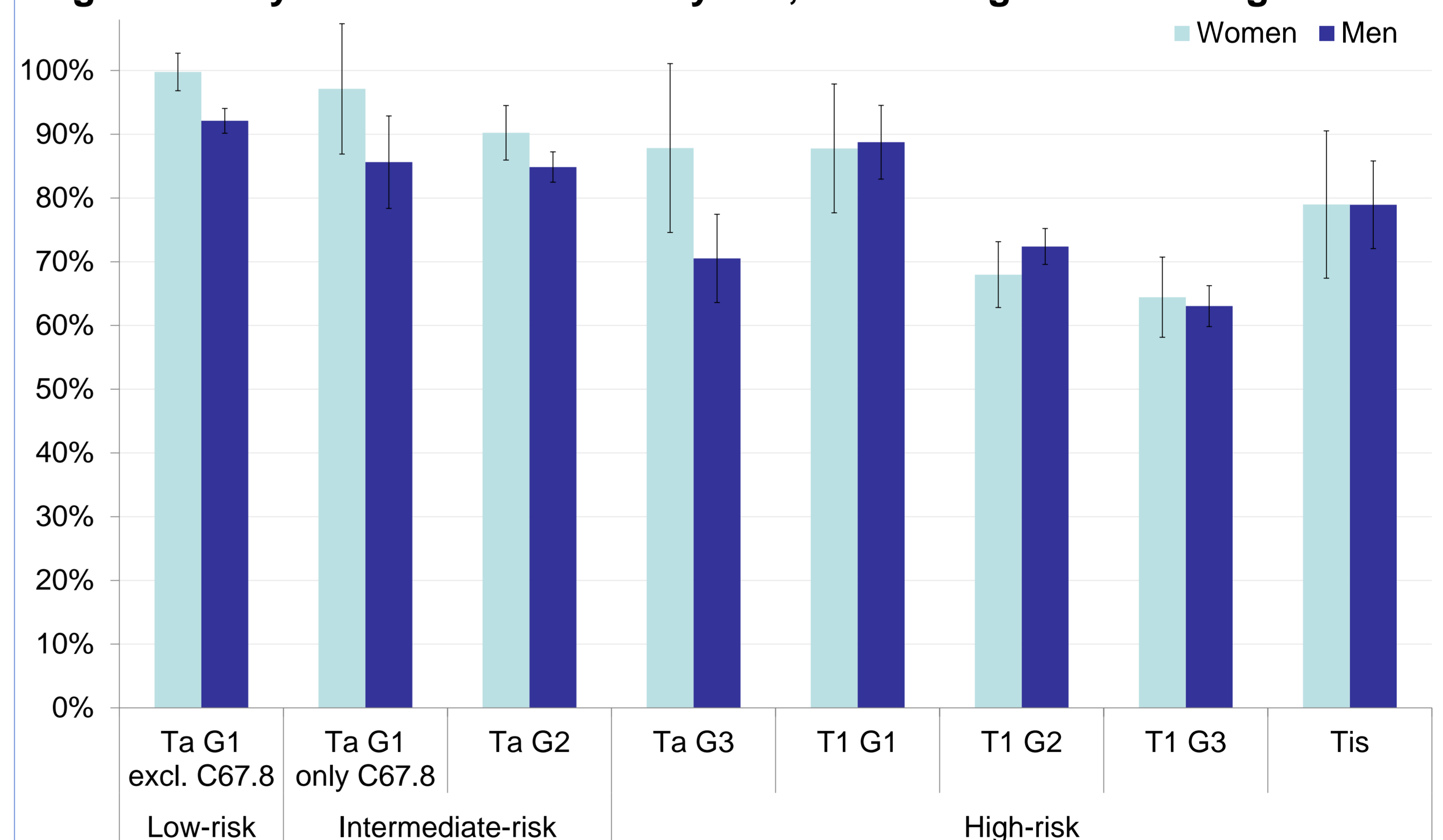


Figure 2: 10-year relative survival by sex, tumor stage and tumor grade



CONCLUSIONS

NMIBC patients with a high-risk tumor had considerably lower survival rates compared to low-risk patients. These results probably reflect their actual higher recurrence and progression risk although they are treated more intensively according to EAU guidelines. The grade of tumor seems to have a substantial influence on survival.

REFERENCES

[1] Babjuk M. et al. (2013) EAU Guidelines on Non-Muscle-invasive Urothelial Carcinoma of the Bladder: Update 2013. European Urology 64: 639–653

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