

Comparing the updated IGCCC prognostication with outcomes at the Beatson West of Scotland Cancer Centre (BWOSCC)

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Introduction

In 2021, the International Germ Cell Collaborative Group (IGCCC) updated their prognostication model for Metastatic Non Seminomatous Germ Cell Tumours (mNSGCT) (1). This was a result of increasing evidence demonstrating improved survival outcomes in patients treated with first line chemotherapy (1,2). The previous model had been formulated in 1997 and was based on data before cisplatin and etoposide regimes became the mainstay of treatment.

The Beatson, West of Scotland Cancer Centre (BWOSCC), manages high volumes of Germ Cell Tumours (GCT). We set out to compare our survival outcomes with that published by the IGCCC. Alignment to their new model would be supportive of it's use in our population.

Method

We conducted a retrospective analysis of all patients with mNSGCT treated with chemotherapy at BWOSCC between 2009 – 2018 (n=82).

Data was collected to define 5-year overall survival (OS) and Progression Free Survival (PFS). We also collected data about both Pulmonary and Non-Pulmonary Visceral Metastases (NPVMs)

Our primary end point was to compare our OS and PFS outcomes, with those generated by the 1997 and the 2021 models via the Kaplan-Meier method.

Our secondary end point was to utilise the updated IGCCC calculator and show Change in PFS (%) from the 1997 model for our patient cohort.

Results

Of the 82 patients included, 56 (68%) were good prognosis, 11 (13%) were intermediate prognosis and 15 (18%) were poor prognosis. The average age of the patient was 28. Lung metastases were present in 33% and Non-pulmonary Visceral Metastases (NPVM) were present in 13%.

Figure 1 demonstrates the breakdown of both OS and PFS into prognostic group and then further subcategorises the data into the 1997 data, the 2021 data and the BWOSCC data.

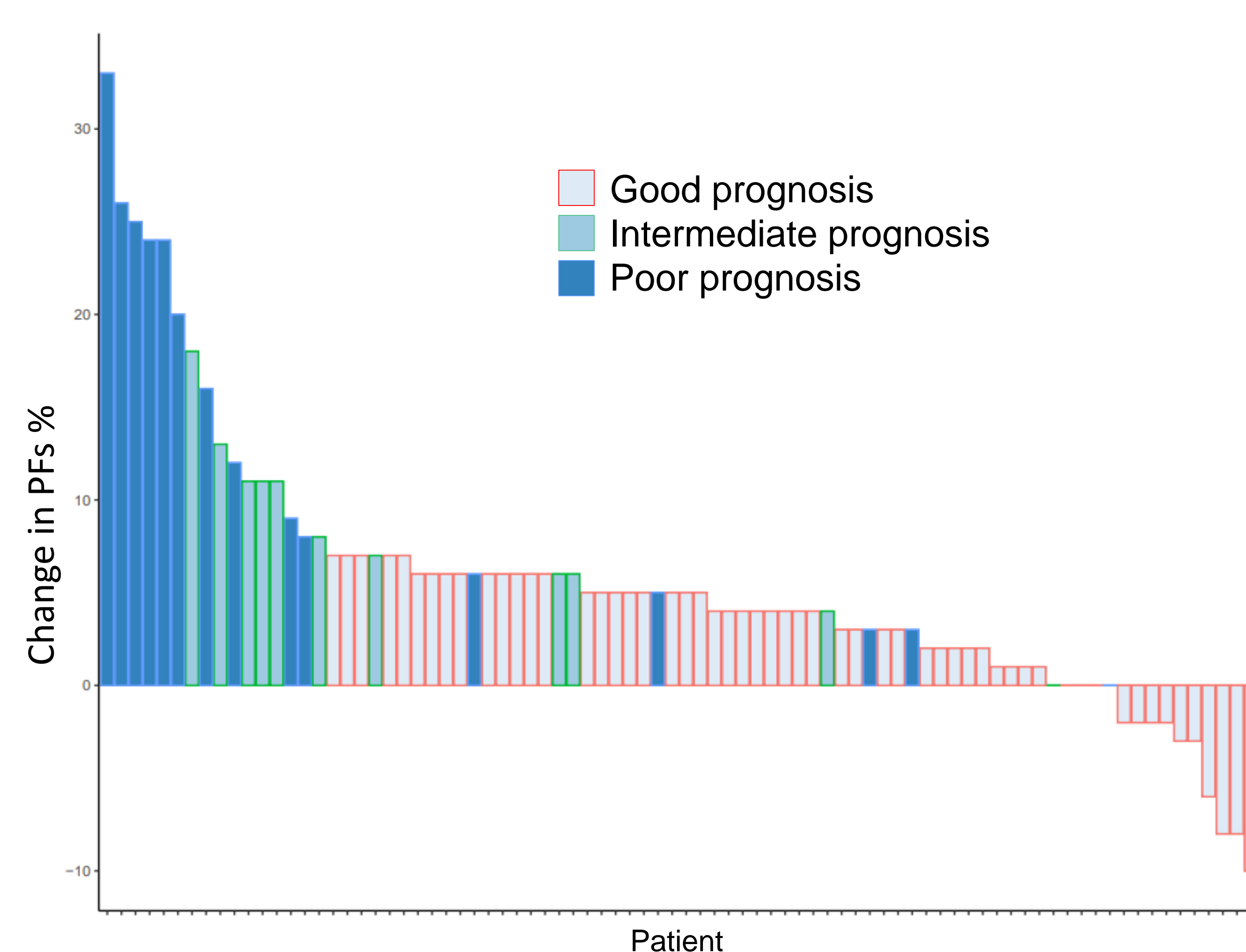
Median PFS was improved by 5% when using the updated model compared to the 1997 model. Good prognosis had a median improvement of 4%, intermediate prognosis of 8% and poor prognosis of 12%.

Figure 2 demonstrates the change in PFS for each patient in our group when their data was put through the 2021 calculator compared to the 1997 calculator. 67 (82%) patients had an increase in their calculated PFS, 5 (6%) patients had the same PFS, 10 (12%) patients had a worse PFS.

Figure 1

	Prognostic group	BWOSCC	2021	1997
Overall Survival at 5 years	Good	98%	96%	92%
	Intermediate	100%	89%	80%
	Poor	73%	67%	48%
Progression Free Survival at 5 years	Good	96%	89%	89%
	Intermediate	86%	75%	75%
	Poor	52%	54%	41%

Figure 2



Conclusion

The collected data demonstrates significant similarities to the IGCCC Updated Consortium in Overall Survival and Progression Free Survival for patients with both good prognosis and poor prognosis. Our intermediate prognosis patient data appears at odds with the updated IGCCC and with the trend in our other prognostic groups. We attribute this to the low numbers (8) in this group compared to the good (59) and poor (15) prognosis categories.

This analysis would support the accuracy of the updated calculator in patients that attend the BWOSCC with germ cell tumours. PFS outcomes are generally improved most in poor prognosis patients with use of the calculator and least in patients with good prognosis. Notably 10 patients from the good prognosis group had a reduction in their predicted PFS. Further verification of our results could be conducted by examination of additional intermediate prognosis patients.

The data collected in this Audit could also be used to demonstrate any difference between BWOSCC and other regions of Scotland

References

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- 2) Fankhauser, C D et al. "Improved survival in metastatic germ-cell cancer." *Annals of oncology : official journal of the European Society for Medical Oncology* vol. 29,2 (2018): 347-351. doi:10.1093/annonc/mdx741