

The performance of the Gratacós classification in the severity assessment in monochorionic pregnancies with selective fetal growth restriction

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Objectives

To evaluate the performance of the Gratacós classification in predicting adverse outcomes among monochorionic pregnancies with selective fetal growth restriction (sFGR).

Methods

This is a retrospective cohort study including monochorionic twin pregnancies with sFGR followed-up in a large tertiary referral center in the UK. Cases diagnosed with other complications were excluded. sFGR was diagnosed using the Delphi criteria and classified according to the Gratacós classification. Diagnostic test accuracy analysis was performed.

Results

- A total of 107 cases were included in the final analysis.
- The majority of cases were classified as Gratacos Type I (83/107, 77.5%); 14.9% (16/107) of cases were Type II, and 7.5% (8/107) were Type III.
- The rate of intact survival of both twins was significantly higher in Type I group (45/83, 54.2%) compared to the Type II and III (3/16, 18.8% and 2/8, 25%, respectively) (p=0.015).
- The ROC analysis showed low accuracy of the Gratacos classification at diagnosis of sFGR in predicting demise of the smaller twin (AUC 0.606, 95% CI 0.462-0.751) or double demise (AUC 0.644, 95% CI 0.453-0.834).
- A higher accuracy was reached when classification at the end of pregnancy was considered, for both demise of the smaller twin (AUC 0.764, 95% CI 0.638-0.890, p<0.001) or double demise (AUC 0.733 (0.563-0.903, p=0.015). Type II or Type III classification at diagnosis showed low positive predictive values (0.40, 95% CI 0.18-0.65 and 0.25, 95% CI 0.05-0.59, respectively) for demise of the smaller twin; and high negative predictive values for the same outcome were observed (0.84, 95% CI 0.76-0.91 for Type II and 0.81, 95% CI 0.73- 0.88 for Type III).

Figure 1. Perinatal outcomes

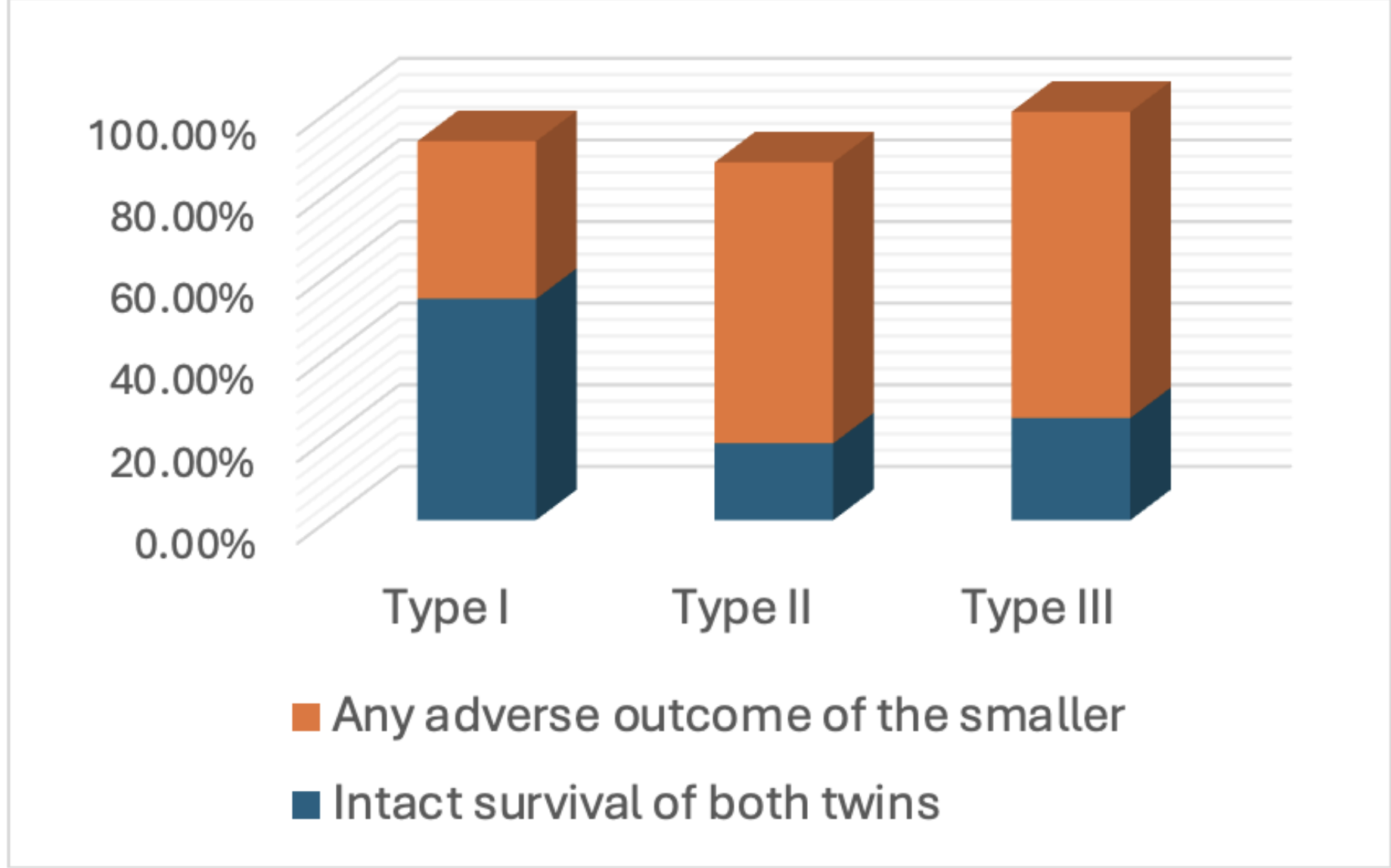


Figure 2. Predictive value at the time of diagnosis

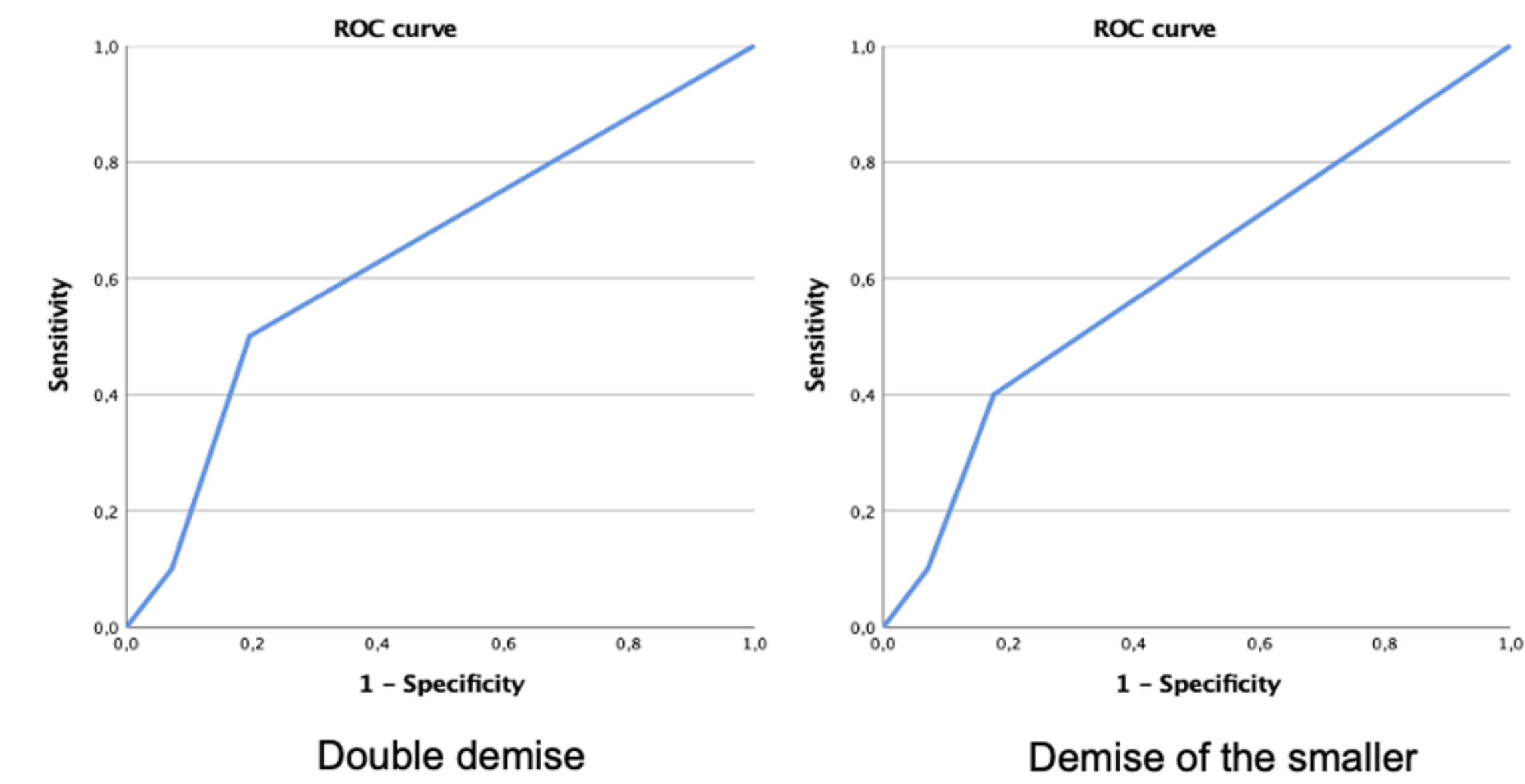
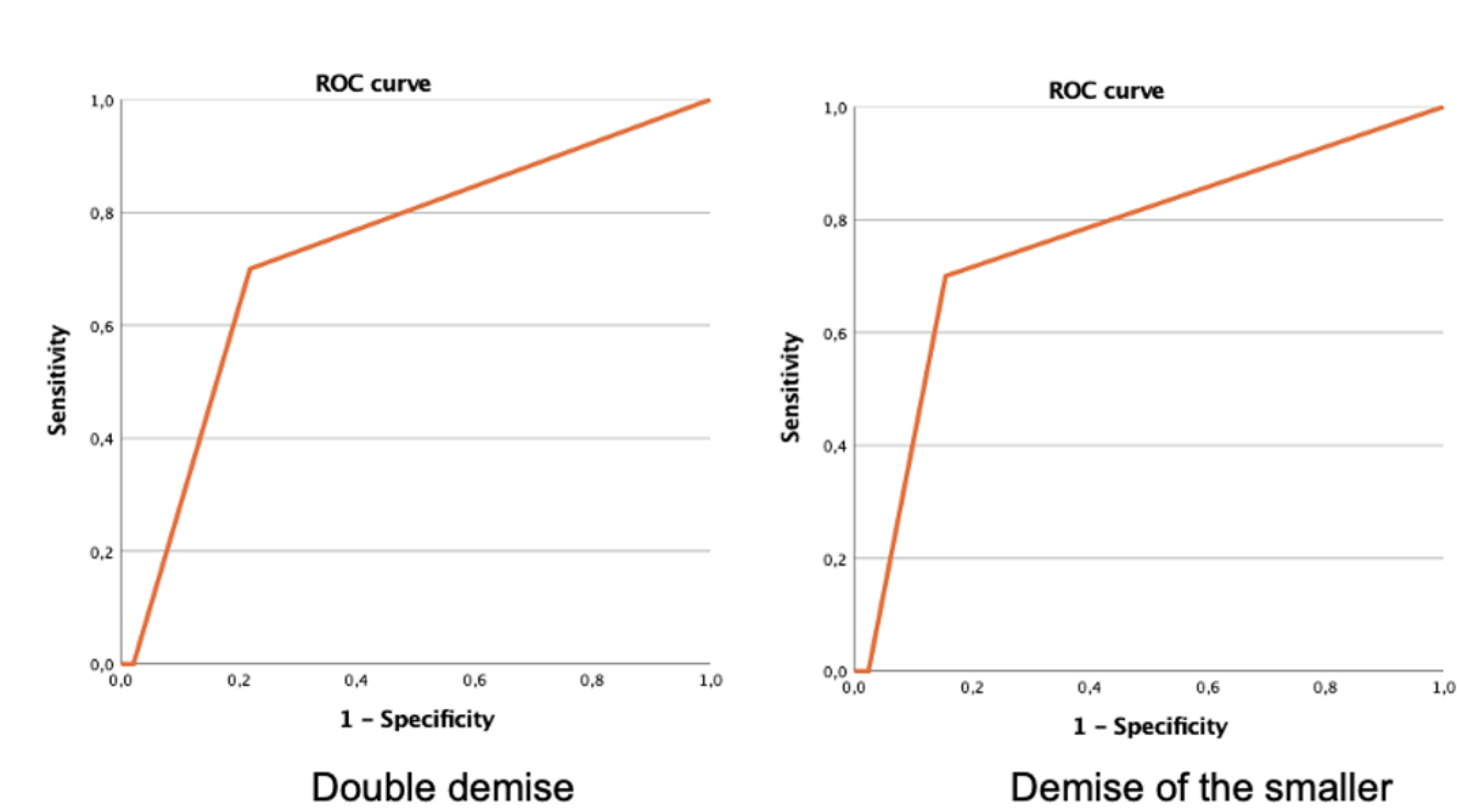


Figure 3. Predictive value at the end of pregnancy



Conclusions

The Gratacós classification showed moderate accuracy in identifying sFGR cases at risk of adverse outcomes. Larger studies are needed to determine optimal predictive factors to assess severity.



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