

PREDICTING THE RISK OF REBLEEDING AFTER CAPSULE ENDOSCOPY IN OBSCURE GASTROINTESTINAL BLEEDING: EXTERNAL VALIDATION OF THE RHEMITT SCORE

João Carlos Silva, Rolando Pinho, Ana Ponte, Adélia Rodrigues, Ana Catarina Gomes, Edgar Afecto, João Correia, Manuela Estevinho, João Carvalho.

Centro Hospitalar Vila Nova de Gaia Espinho

BACKGROUND & AIMS

Prediction of rebleeding after capsule endoscopy (CE) in obscure gastrointestinal bleeding (OGIB) is challenging. The RHEMITT score recently described includes 7 variables: chronic kidney disease (CKD); heart failure (HF), P1 / P2 injuries (Saurin's classification); major hemorrhage (drop in hemoglobin> 2d / dL or need for transfusion> 2U GR); incomplete examination; smoking and endoscopic treatment. This tool has been shown to accurately predict the risk of recurrence after an EC study. The primary aim of this study was to perform external validation of the RHEMITT score.

METHODS

- **Retrospective cohort-study.**
- **Consecutive inclusion of patients submitted to CE (Mirocam®) for OGIB between January 2017 and December 2018.**
- **Rebleeding was defined as: (1) a drop in hemoglobin> 2g / dL or (2) Melena or hematochezia.**
- **The RHEMITT score was calculated (0-18 points) and subsequently the accuracy of the score in the prediction of rebleeding was assessed**

RESULTS

Table 1 – Patient demographics and OGIB clinical features.

| | TOTAL (n=160) | REBLEEDING FREE (n=137) | REBLEEDING (n=23) | p value |
|--------------------------|------------------|----------------------------|----------------------|---------|
| Age, years (μ±SD) | 65.8±13.6 | 64.8 ±13.9 | 71.6±10.4 | 0.028 |
| Male, n (%) | 67 (41.9) | 56 (40.9) | 11 (47.8) | 0.532 |
| Follow-up, months (μ±SD) | 19.9 (9.0) | 22.0 (7.7) | 7.5 (5.7) | <0.001 |
| OGIB, n (%) | | | | 0.057 |
| - Occult, n (%) | 135 (84.4) | 119 (86.9) | 16 (69.9) | |
| - Overt, n (%) | 25 (15.6) | 18 (13.1) | 7 (30.4) | |
| Hemoglobin, g/dl (μ±SD) | 9.2±2.1 | 9.4±2.1 | 8.1±1.9 | 0.008 |

OGIB, Obscure Gastrointestinal bleeding; CE, Capsule Endoscopy; μ,mean; SD, standart deviation. p<0.05 meaning statistical significance.

Table 2 – RHEMITT score variables for rebleeding risk prediction

| | TOTAL (n=160) | REBLEEDING FREE (n=137) | REBLEEDING (n=23) | p value |
|------------------------------------|------------------|----------------------------|----------------------|---------|
| CKD, n (%) | 22 (13.8) | 15 (10.9) | 7 (30.4) | 0.020 |
| HF, n (%) | 128 (80.0) | 24 (17.5) | 8 (34.8) | 0.087 |
| Tobacco consumption, n (%) | 30 (18.8) | 23 (16.8) | 7 (30.4) | 0.148 |
| Saurin Classification ¹ | | | | |
| • P1 | 34 (36.6) | 30 (40.5) | 4 (21.1) | 0.013 |
| • P2 | 53 (57.0) | 39 (52.7) | 14 (73.7) | 0.002 |
| Major bleeding ² | | | | |
| Incomplete CE, n (%) | 13 (8.1) | 9 (6.6) | 4 (17.4) | 0.096 |
| Endoscopic treatment, n (%) | 19 (11.9) | 12 (8.8) | 7 (30.4) | 0.008 |

¹Saurin Classification: P2, high potential for bleeding; P1, uncertain bleeding potential; P0 very low risk of bleeding.CE, Capsule Endoscopy; μ,mean; SD, standart deviation. p<0.05 meaning statistical significance.

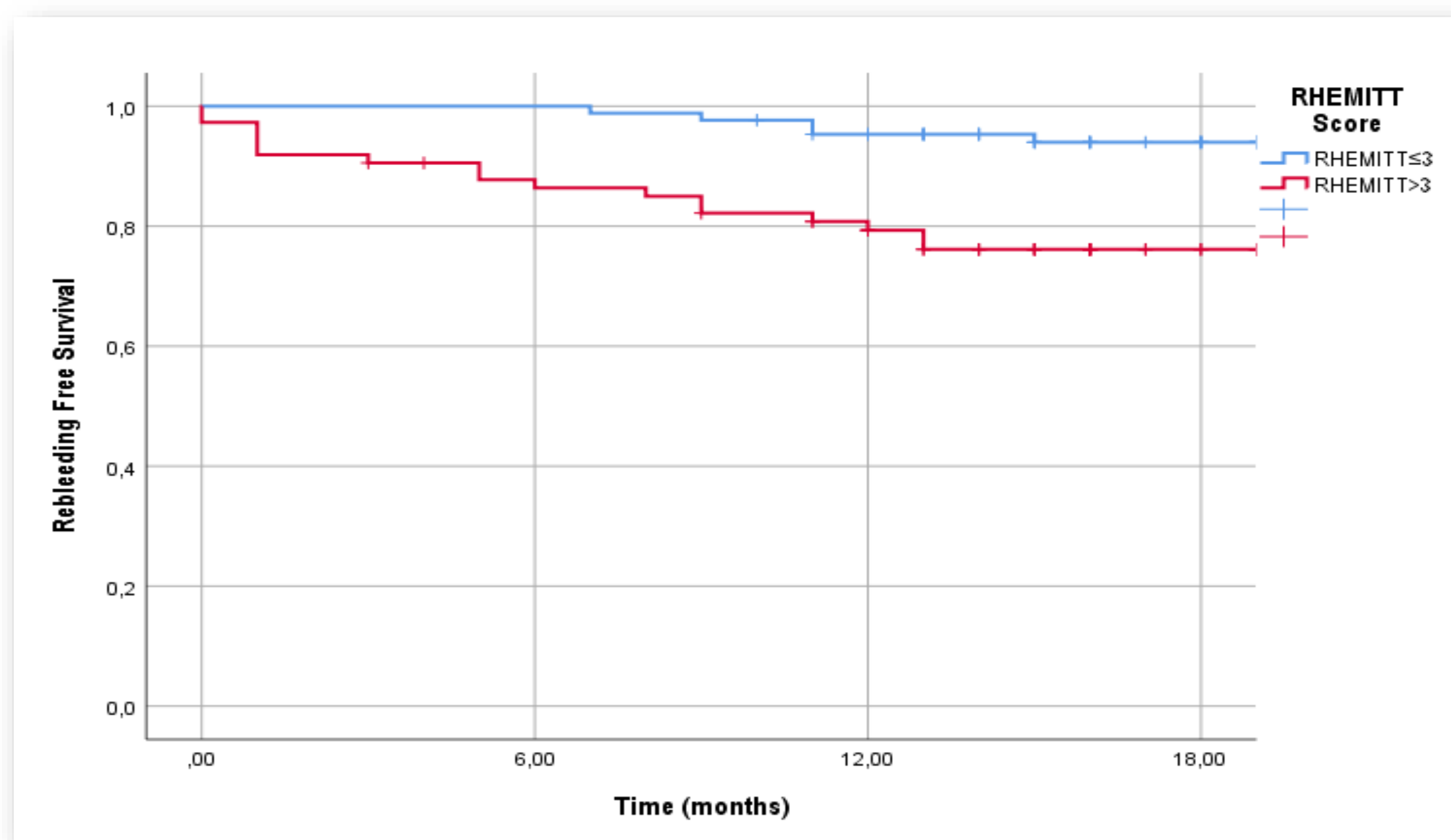


Figure 1: Kaplan–Meier curves for rebleebing free survival according to RHEMITT Score.

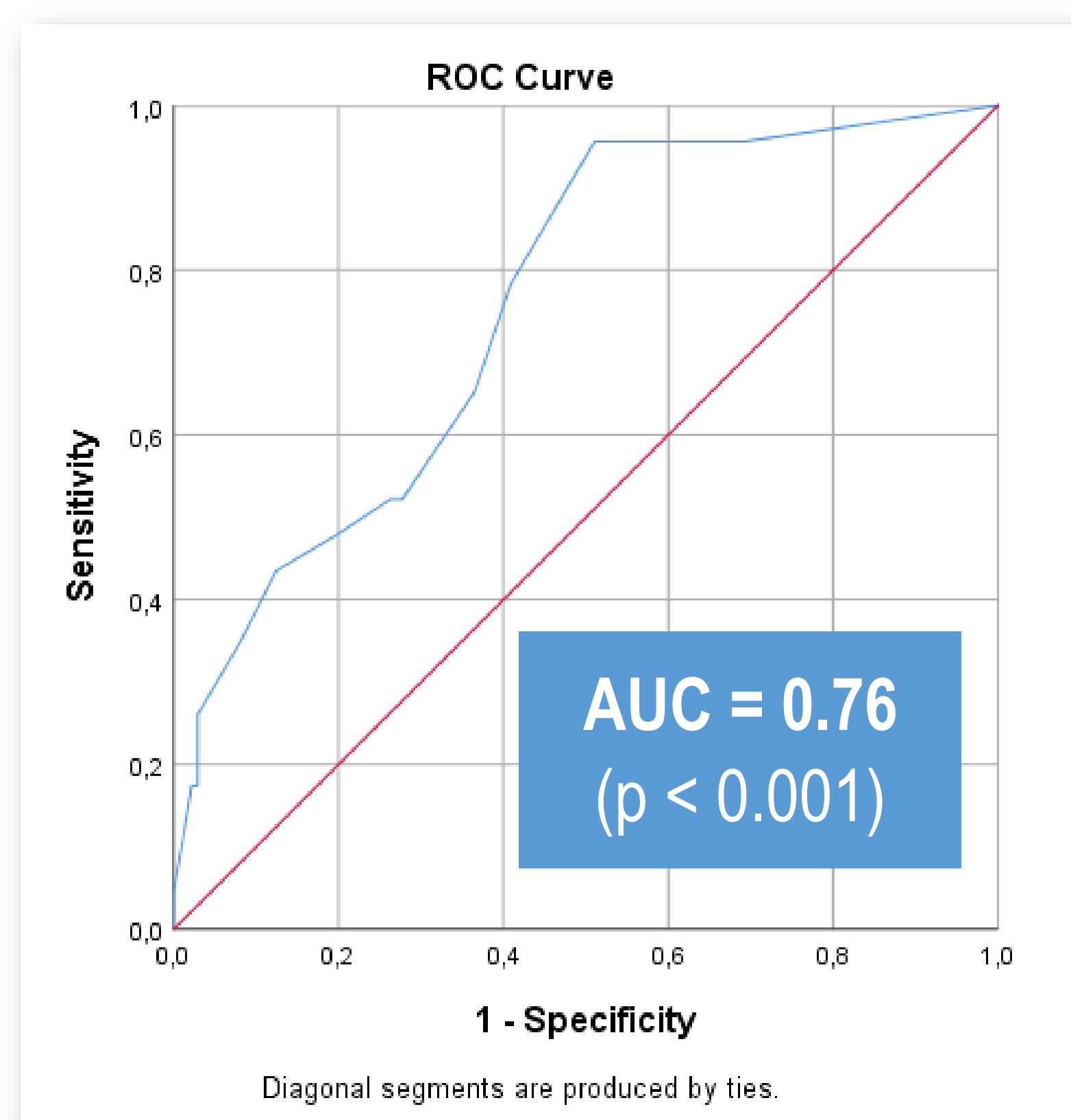


Figure 2: Area under the ROC curve for rebleeding according to RHEMITT Score. Significance level p< 0.05. AUC, Area under the curve.

Table 3 – Rebleeding according to RHEMITT score risk stratification

| | TOTAL (n=160) | REBLEEDING FREE (n=137) | REBLEEDING (n=23) | p value |
|-------------------------------------|------------------|----------------------------|----------------------|---------|
| RHEMITT score ¹ , (μ±SD) | 4.2±3.9 | 3.7 ± 3.6 | 7.35±4.2 | <0.001 |
| • Low risk | 86 (53.8) | 81 (59.1) | 5 (21.7) | <0.001 |
| • Intermediate risk | 64 (40.0) | 52 (38.0) | 12 (52.2) | <0.001 |
| • High risk | 10 (6.3) | 4 (2.9) | 6 (26.1) | <0.001 |

¹ RHEMITT Score: chronic kidney disease (CKD); heart failure (HF), P1 / P2 injuries (Saurin's classification); major hemorrhage (drop in hemoglobin> 2d / dL or need for transfusion> 2U GR); incomplete examination; smoking and endoscopic treatment.. p<0.05 meaning statistical significance.

Table 4 – Long-term rebleeding according to RHEMITT score.

| | RHEMITT≤3 (n=86) | RHEMITT>3 (n=74) | p value |
|--|---------------------|---------------------|---------|
| Rebleeding at 6-months ¹ , (%) | 1.2 | 13.6 | <0.001 |
| Rebleeding at 12-months ¹ , (%) | 4.7 | 20.7 | <0.001 |
| Rebleeding at 18-months ¹ , (%) | 6.0 | 23.9 | <0.001 |

¹ Kaplan–Meier survival curves were used to estimate the time to rebleed and log-rank test was used to compare rebleeding across groups. p<0.05 meaning statistical significance.

CONCLUSION

The present external validation cohort-study confirms the usefulness and accuracy of the RHEMITT score in predicting rebleeding after CE for OGIB.

REFERENCES

1. Rowan, C.R., et al., DUBLIN [Degree of Ulcerative colitis Burden of Luminal Inflammation] Score, a Simple Method to Quantify Inflammatory Burden in Ulcerative Colitis. J Crohns Colitis, 2019. 13(11): p. 1365-1371.
2. Lamb, C.A., et al., British Society of Gastroenterology consensus guidelines on the management of inflammatory bowel disease in adults. Gut, 2019. 68(Suppl 3): p. s1-s106.
3. Ponte, A., et al., Impact of Histological and Endoscopic Remissions on Clinical Recurrence and Recurrence-free Time in Ulcerative Colitis. Inflamm Bowel Dis, 2017. 23(12): p. 2238-2244.
4. Marchal-Bressenot, A., et al., Development and validation of the Nancy histological index for UC. Gut, 2017. 66(1): p. 43-49.