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THROMBOTIC RISK STRATIFICATION IN MULTIPLE MYELOMA: PREDICTORS MISSING FROM IMPEDE-VTE SCORE IDENTIFIED IN MOROCCO.

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INTRODUCTION

Thromboembolic complications, estimated at 6–13% internationally [1,2], represent second leading cause of death in multiple myeloma patients. They remain poorly documented in North Africa where local data lacking. Guidelines recommend stratified prophylaxis per IMPEDE-VTE score: aspirin for low-risk patients; low-molecular-weight heparin (LMWH) for intermediate/high-risk patients [3] .

First North Moroccan cohort study aims to analyze real-world prophylactic practices marked by predominant aspirin use due economic accessibility, evaluate IMPEDE-VTE score applicability, assess thrombotic events incidence.

METHODS:

We conducted single-center retrospective study in the hematology department of Tangier University Hospital Center, including 126 patients with multiple myeloma diagnosed and followed between 2019 and 2025 (median follow-up, 17 months).

IMPEDE-VTE score was retrospectively calculated for 100 patients (79.4%), data complete. Patients were then classified as low/intermediate/high risk.

We performed a cross-analysis between the IMPEDE-VTE score, type of prophylaxis used, and occurrence of thromboembolic events (TEEs) to assess concordance/discordance.

Predictive factors for TEEs evaluated using univariate/multivariate tests.

RESULTS:

Among 126 patients (50.8% women [n=64], 49.2% men [n=62]), median age 60.5 years, TEEs data were available for 105 patients (83.3%), allowing analysis of complications under universal prophylaxis (n=105): aspirin in 82 patients (78.1%) and LMWH in 23 patients (21.9%).

Thirteen TEEs were observed (overall incidence 12.4%), predominantly venous: 4 at diagnosis, 8 under active treatment (7.6%).

Cross-analysis: all TEEs under aspirin (30% high-risk group); none under LMWH regardless of risk level.

Major predictive factors: prolonged bedrest (OR=30.61; p=0.001), amyloidosis (p<0.001), hypercalcemia (p=0.014), IMiD exposure (p=0.001).

DISCUSSION

This first North Moroccan study documents a TEE incidence of 7.6% under universal prophylaxis dominated by aspirin, equivalent to the 6–13% reported in large international series (Chakraborty et al., Brown et al., Sborov et al.) [1,2,4], despite limited LMWH use.

This may be explained by our more favorable demographic profile (younger, normal-weight population with less exposure to classical cardiovascular risk factors) compared to older and obese international cohorts [1,2,4].

Our univariate analysis identified major local predictive factors: prolonged bedrest (76.9% of thrombotic cases), systemic amyloidosis (38.5% of thrombotic cases), and hypercalcemia (p=0.014).

These factors, not included in the IMPEDE-VTE score [3], justify a pragmatic hybrid strategy adapted to our context: aspirin for low risk; LMWH for intermediate/high risk, or prolonged bedrest, or documented systemic amyloidosis (Figure 1).

The originality of this study lies in its first Moroccan documentation of multiple myeloma thromboembolic complications in real-world practice at CHU Tangier, identifying major local predictive factors that are absent from international scores.

Our limitations are those of retrospective studies with a modest sample size (n=126, 13 TEEs) and single-center recruitment, justifying the need for prospective multicenter studies to validate our algorithm.

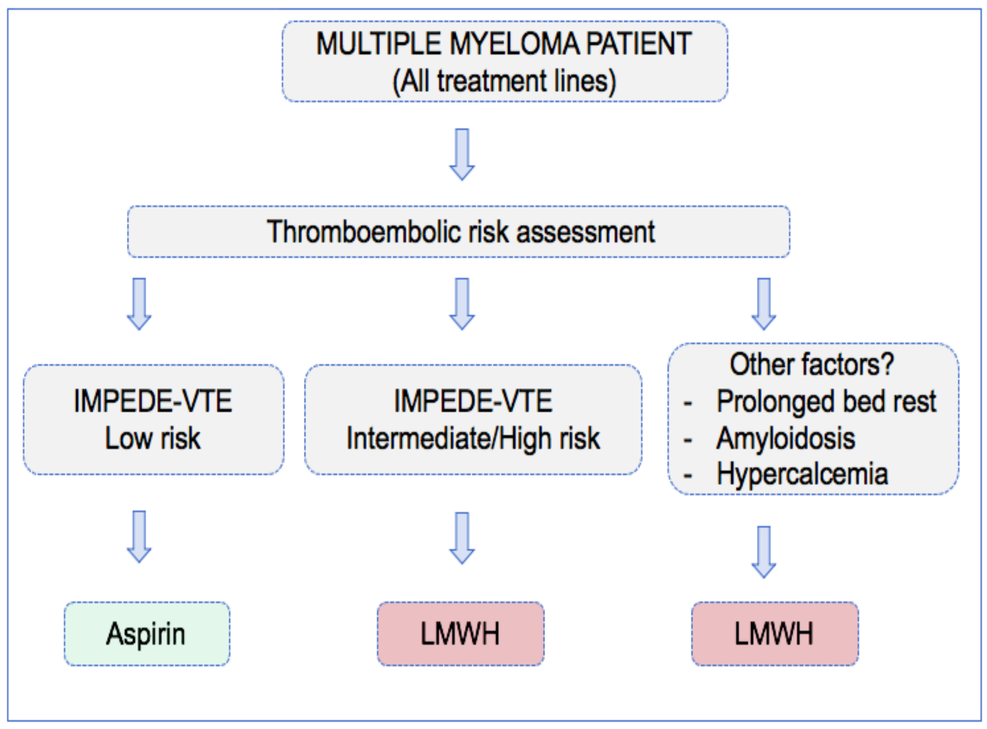

Figure 1: Proposed algorithm for thromboprophylaxis in multiple myeloma (CHU Tangier)

CONCLUSION

This first Moroccan study documents 7.6% thromboembolic complications, comparable to international literature (6-13%), despite universal prophylaxis dominated by aspirin. We identified three major factors: prolonged bedrest, systemic amyloidosis, and hypercalcemia, not included in the IMPEDE-VTE score. Results question population specificity. Our study proposes adapted local thromboprophylaxis algorithm and calls for prospective multicenter validation.

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