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CLINICAL RESEARCH

# A cross-sectional evaluation of venous thromboembolism risk and use of venous thromboembolism prophylaxis in hospitalized patients in Senegal

## Évaluation du risque de maladie thromboembolique veineuse et de sa prophylaxie chez les patients hospitalisés au Sénégal

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**KEYWORDS**
Venous thromboembolism;
Prophylaxis

**Summary**
*Background.* — Venous thromboembolism is a common and preventable cause of morbidity and mortality in hospitalized patients. There is a lack of data on the distribution of risk factors and prophylaxis practices in sub-Saharan Africa.

*Abbreviations:* ACCP, American College of Chest Physicians; CI, confidence interval; DVT, deep vein thrombosis; ENDORSE, Epidemiologic International Day for the Evaluation of Patients at Risk for Venous Thromboembolism in the Acute Hospital Care Setting; LMWH, low-molecular-weight heparin; PE, pulmonary embolism; TROMBUS, *Table ronde de mobilisation pour le bon usage des antithrombotiques* (Round Table of Mobilization for the Best Use of Antithrombotics); UFH, unfractionated heparin; VTE, venous thromboembolism.

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Hospitalized patients;
Senegal;
Sub-Saharan Africa

*Aim.* — To assess the prevalence of venous thromboembolism risk in hospitalized patients and to determine the proportion of at-risk patients who receive prophylaxis.
*Methods.* — The study was a cross-sectional hospital-based survey. On the basis of the global ENDORSE methodology, patients aged ≥ 40 years admitted to a medical ward or those aged ≥ 18 years admitted to a surgical ward were assessed for risk of venous thromboembolism by hospital chart review. Distribution of risk factors and coverage of prophylaxis in at-risk patients were determined using the 2004 American College of Chest Physicians evidence-based consensus guidelines.
*Results.* — From October to November 2008, 520 patients (278 medical; 242 surgical) were enrolled in 12 hospitals across Senegal. Two hundred and ninety-eight (57%) were at risk of venous thromboembolism; 152 (57.4%) medical patients and 146 (60.3%) surgical patients. Among those at risk, 48 (31.6%) medical patients and 52 (35.6%) surgical patients received a prescription for prophylaxis. Among patients without contraindication to anticoagulants, 33.8% (46/136) on medical wards and 37.5% (48/128) on surgical wards received prophylaxis.
*Conclusion.* — The risk of venous thromboembolism was frequent in hospitalized patients in Senegal but only a few received the recommended prophylaxis. There is a need to implement a programme to improve venous thromboembolism awareness and prophylaxis.


**MOTS CLÉS**
Maladie thromboembolique ;
Prophylaxie ;
Patients hospitalisés ;
Sénégal ;
Afrique subsaharienne

**Résumé**
*Contexte.* — La maladie thromboembolique veineuse est une cause fréquente mais évitable de décès et de morbidité hospitalière. En Afrique sub-saharienne, les données sur les facteurs de risque et la prophylaxie sont rares.
*Objectif.* — Évaluer le risque de maladie thromboembolique veineuse chez les patients hospitalisés au Sénégal et déterminer la proportion recevant une prophylaxie.
*Méthodologie.* — Enquête transversale hospitalière. Compte tenu de la méthodologie de l'enquête Endorse, les patients âgés de 40 ans ou plus admis en milieu médical et ceux de 18 ans ou plus en milieu chirurgical ont été étudiés à partir de leur dossier hospitalier. L'évaluation du risque thromboembolique veineux et la détermination de la prescription de prophylaxie ont été faites selon les critères ACCP-2004.
*Résultats.* — D'octobre à novembre 2008, 520 patients (278 en médecine et 242 en chirurgie) ont été inclus dans 12 hôpitaux au Sénégal. Deux cent quatre-vingt-dix-huit, 298 (57 %) présentaient un risque de maladie thromboembolique veineuse dont 152 (57,4 %) en médecine et 146 (60,3 %) en chirurgie. Parmi les patients à risque, 48 (31,6 %) en médecine et 52 (3,6 %) en chirurgie ont reçu une prescription de prophylaxie. Chez les patients à risque ne présentant pas de contre-indication aux anticoagulants, la proportion de prophylaxie était de 33,8 % (46/136) en médecine et 37,5 % (48/128) en chirurgie.
*Conclusion.* — Le risque de maladie thromboembolique veineuse est très fréquent dans les hôpitaux sénégalais. Peu de patients reçoivent la prophylaxie adaptée. Il est nécessaire de mettre en place des programmes pour améliorer la connaissance de la maladie et de sa prophylaxie.


## Background

VTE is a common complication that affects patients hospitalized for a variety of medical and surgical conditions. It contributes to longer duration of hospitalization stay, morbidity and mortality, with PE accounting for 5—10% of deaths in hospitalized patients [1]. VTE is often asymptomatic, misdiagnosed and unrecognized at death, as there is a lack of routine postmortem examinations. These factors are thought to result in a marked underestimation of VTE incidence [2].

VTE in hospitalized patients is often thought of as a consequence of surgery, as major surgery is a risk factor, but medical patients also are at risk. Non-surgical patients account for 70—80% of fatal PE cases and 50—70% of symptomatic thromboembolic events [3]. In an 8-month prospective screening study, DVT was detected by ultrasound in 33% of adults admitted to a medical intensive care unit [4]. The high incidence of DVT in medical patients and the high percentage of patients with VTE who are asymptomatic underscore the importance of identifying and assessing the risk of VTE in hospital patients, so that prophylactic strategies can be implemented [5]. Up to 10% of hospital deaths are caused by PE, suggesting that there is room for improvement in identifying patients at risk of VTE and providing VTE prophylaxis [3].

Risk factors for VTE are well established. Overall, VTE risk should be perceived as the combined result of constitutional risk factors and the added risk attributable to the patient's current medical situation and/or surgical procedure [6]. The most common personal risk factors include age > 75 years, cancer (history or current), history of VTE,