



EDITORIAL

The importance of prophylaxis in venous thromboembolism

*A importância da profilaxia do tromboembolismo venoso*Marcelo Calil Burihan^{1,2,*}¹Hospital Santa Marcelina. Santa Marcelina Faculty of Medicine. São Paulo, São Paulo, Brazil.²Brazilian Society of Angiology and Vascular Surgery (SBACV)

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There has been much discussion worldwide regarding the prophylaxis of venous thromboembolism (VTE) in inpatients and outpatients during coronavirus pandemic. After the pandemic is over, or at least minimized, one should emphasize its importance during and after hospitalization, regardless of the case.

Our primary focus is patient care and, for that, excellence for treating various diseases and safety concerning the medications administered must be achieved. Unfortunately, the hospital environment is not at all safe. According to international statistics, the risk of death in hospitalizations occurs in one in every 165 hospitalizations. It is an unacceptable risk! While flying is something ultra-secure, less than one case per 100,000 flights, we must minimize the risks to inpatients. For this purpose, VTE prophylaxis comes in here. However, why is it necessary? In the United States of America (USA), there are more than 200,000 deaths from VTE per year, being the leading cause of preventable death in hospitalized patients¹. Approximately 60 to 70% of VTE cases are acquired in the hospital. Ten to fifteen percent of cases occur in outpatients without adequate prophylaxis². Studies like the one of Professor Maffei from Botucatu show us an occurrence of almost 20% of pulmonary embolism (PE) in autopsies, and a risk of deep vein thrombosis (DVT) of 0.6 cases/1,000 persons per year, close to the number in Europe (0.9 cases/1,000

inhabitants/year) and the US (0.8 cases/1,000 inhabitants/year)^{3,4}.

An alarming fact is that every year 10 million people evolve with VTE, and every 37 seconds, one of them dies in the western world⁵. From an epidemiological viewpoint, there is an upward incidence from the age of 40, as the older the person, the more frequent it is.

In the last two decades, with the increase in complementary exams and new CT angiographies, the diagnosis of PE has intensified. Other relevant epidemiological data is survival after an episode of DVT or post-PE. The survival at five years after one DVT is approximately 70%, but concerning PE, this percentage drops to less than 50%¹.

Other relevant data are related to direct or indirect costs in the diagnosis and treatment of VTE. In the USA, these costs reach stratospheric levels of 7 to 10 billion dollars a year³. In our country, unfortunately, there are no estimates. In 2006, the disease affected more than 950,000 Americans, with a prediction that, by 2050, this number will exceed one million eight hundred thousand cases³. If the number of deaths per year is frightening in the USA, it is even higher in the European Community, where more than 400 thousand people die from VTE per year⁴. The importance of the disease is extreme. The number of deaths from VTE is more than double the sum

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of deaths from breast cancer, prostate cancer, AIDS, and trauma. In our country, the data seem to be underestimated, reaching approximately 120 thousand deaths per year.

Awareness campaigns on what is thrombosis, its causes, and possible prevention are essential. On October 13, considered the World Thrombosis Day, there have been demonstrations in the European Community and the North American and Canadian communities on the subject. In Brazil, the Brazilian Society of Angiology and Vascular Surgery has intensified the population's discernment on how important the topic is and the subject's knowledge through public attendance, interviews in the spoken, written and online social media.

Brazilian Unified Health System Database (DataSUS) shows that we had in 2014 about 50 thousand hospitalizations at an average cost of R\$ 1,500 in EPs and R\$ 500 in DVTs. The problem is more remarkable when analyzing the average in-hospital days due to PE. This number reaches ten days, greater than the average number of hospitalizations for acute myocardial infarction, around eight days.

Statistics show that 10% of hospital deaths are attributed to VTE, with 50 to 60% of cases having no previous diagnostic suspicion. We cannot treat VTE as something that has never happened to us, says the American Society of Plastic Surgery. According to the American College of Chest Physicians' recommendations in its 8th edition in 2008⁶, every general hospital should have an active formal strategy that deals with the prevention of VTEs. It must be prepared in writing, covering the entire Institution. These strategies increase adherence to prophylaxis and should use computerized systems to support decision making, preprinted orders, reviews, and frequent feedback.

Many clinical studies, such as ENDORSE⁷ and NICE⁸, show that VTE prophylaxis is used in only 50% of eligible inpatients. Despite the guidelines, VTE prophylaxis remains underutilized, particularly among surgical patients. Several reasons for inadequate prophylaxis may happen, from the absence of patient risk

assessment, fear of bleeding, the lack of guidelines knowledge, failing to apply in the high-risk and applying in the low risk, until the error in dosage and duration of prophylaxis.

The Brazilian Guideline for VTE Prophylaxis in clinical patients uses the Padua Score, dividing patients into high risk and low risk. Instead, surgical guidelines are based on Caprini Score, dividing patients into low, moderate and high risk. Caprini's most recent considerations, not yet validated, divide the risks only into high and low. Patients over the age of 40 years, hospitalized and with reduced mobility, must have their VTE prevention protocol completed and prophylaxis performed.

Especially in patients with cancer, who are seven times more likely to develop thrombosis, prophylaxis should be instituted. VTE is the second leading cause of death in those patients, occurring in 2 to 4% of hospitalized, and remains at high rates up to 30 days after diagnosis. Also, in a patient undergoing outpatient chemotherapy, VTE is the leading cause of preventable death. One in 200 patients with cancer will have VTE, with 15% developing symptomatic, while 50% will have asymptomatic VTE⁹. To better understand the risk of VTE in clinical cancer patients, the Korana Score has been used lately¹⁰. VTE prophylaxis is recommended for many cancer patients. Still, for prophylaxis, low molecular weight heparin (LMWH) is indicated¹¹. The reduction in DVT in surgical patients is approximately 60% after using LMWH, a number similar to the reduction in PE.

Despite the uncertain benefits, mechanical prophylaxis with graduated compression stockings or intermittent pneumatic compression may be preferable to non-prophylaxis in patients at high risk of bleeding.

VTE is an important health problem, resulting in significant morbidity and mortality and expenditure of resources. There is sufficient evidence to recommend the routine use of pharmacological prophylaxis. A kilo of prophylaxis is better than 100 grams of treatment, always remembering that Medicine is the science of transient truths transformed into law for didactic purposes only.

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