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Guidelines for Venous Thromboembolism and Clinical Practice in Italy: A Nationwide Survey

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Venous thromboembolism (VTE) is a common health problem for today's society, and considering the role that it plays in surgical patients (general surgery, gynecology, and orthopedics), new advances in our understanding of the procedures and trauma characteristics are relevant and necessary. The most important and recently published guidelines concerning this problem have been taken into consideration, leading to articulate investigations and data evaluation. This project has proposed a data-survey framework available as a questionnaire in order to investigate application of the guidelines for VTE throughout the national territory. Of the total 714 Italian centers, a random sample of 214 were contacted and asked to take part in this study; of these, 146 replied (20.4% of total and 68.2% of the sample): 48 departments of general surgery, 46 departments of gynecology, and 52 departments of orthopedics. About 70% of the centers has appropriate information about surgery as a risk factor for VTE. The answers have provided evidence of an adequate knowledge of the instrumental and laboratory diagnostic pathways, useful to confirm the diagnosis of TE (80%). Data waiting compared with morbidity and mortality rates related to deep vein thrombosis and pulmonary embolism showed an increase of mortality associated with the diagnostic data timing of supply, with an exponential trend linked to the data acquisition delay. Both risk stratification and adequate application of prophylaxis together with treatment devices represent a real tool to control morbidity and mortality for VTE. Moreover, diagnostic data waiting significantly influences adequate prophylaxis. In Italy, only 40% of the centers are ready to provide diagnostic data within 12 hr.

INTRODUCTION

The clinical impact and incidence of venous thromboembolism (VTE) have led to a number of leading scientific societies requesting an accurate definition of specific guidelines . The guidelines formulated by the American Society for Chest Physicians (ASCP)[1] are routinely used for the stratification of risk and definition of procedures for prophylaxis and treatment.

According to such guidelines, over three-fourths of pulmonary embolism (PE) events occur in medical patients.[2] However, because of the variety of risk factors in these patients and their individual health problems (e.g., comorbidities, therapies),[3] the guidelines formulated for these cases are scarcely applied. The type of procedure as well as trauma are crucial for VTE in surgical patients (general surgery, gynecology, and orthopedics). Therefore, predictive algorithms that should help to identify high-risk subjects (i.e., those who require intensive prophylaxis) have been defined.[2,4] Appropriate use of the guidelines is thus an opportunity to decrease

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mortality and morbidity rates in this setting.[2,5,6] We have considered that, in addition to appropriate knowledge of the issue, the availability of specific technical resources in each health-care structure may affect dramatically the way guidelines are applied. We have evaluated the level of knowledge of VTE guidelines as well as the quantitative and qualitative information about diagnosis, prophylaxis, and treatment of a large number of Italian health departments that normally cope with patients at high risk of developing deep vein thrombosis (DVT) and PE.

Although studies based on questionnaires are generally considered not very rigorous and somewhat approximate, the significant amount of data collected in this work could stimulate further studies and strategies to implement guidelines about VTE in surgical settings.

MATERIALS AND METHODS

Of the total 714 public and private health-care facilities identified by each Health Regional Government Office and web search results, a random sample of 214 were contacted and asked to take part in the study. The self-administered questionnaire was mailed to selected participants and particularly to physicians who headed the general surgery, gynecology, and orthopedics wards in the centers who were responsible for answering the questionnaire, with an accompanying cover letter providing details on the purpose of the study and a reply-paid, addressed envelope. To keep track of who responded and to identify those who required follow-up, each returned envelope was individually coded with an identification number. To encourage participation of those who did not respond to the initial mailed questionnaire, in order to increase the response rate, telephone calls and two additional complete mailings, with another copy of the questionnaire and of the envelope, were sent to nonrespondents.

The standard form involved a certain number of questions (Fig. 1). In order to achieve better reliability of the collected data and to verify the quality of the practical approach carried out in each center, a series of filter questions were employed, with emphasis on laboratory and instrumental diagnostic devices and facilities for treatment, together with questions related to general information (i.e., not exclusively related to VTE). Five university centers (local units) supervised the forwarding and data collection.

Validation of the questionnaire to reveal major difficulties and weaknesses was performed through a pilot study, surveying a convenience sample of 20 surgeons, gynecologists, and orthopedists; and on the basis of the results of the pretesting, modifications were made to improve the validity of responses.

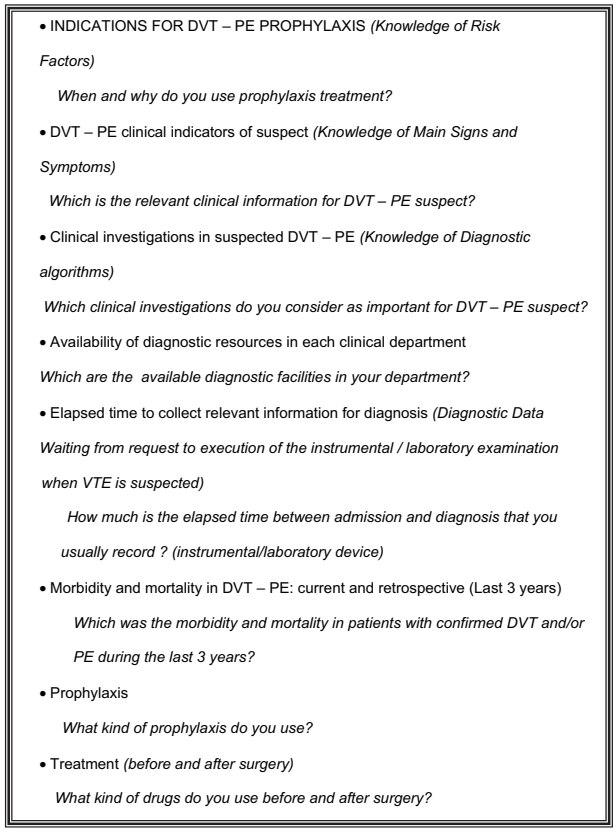

Fig. 1. The questionnaire.

RESULTS

Replies were received from 146 centers (20.4% of total and 68.2% of the sample): 48 departments of general surgery, 46 departments of gynecology, and 52 departments of orthopedics.

Health-care centers were used by 12,391,240 individuals (20.4% of the Italian population).

In order to make the statistical data analysis more uniform, stratification among centers in north (25,600,000 inhabitants), central (10,900,000 inhabitants), and south (20,000,000 inhabitants) Italy was chosen.

- *Indications about DVT—PE prophylaxis (knowledge of the risk factors):* About 70% of the centers possessed some appropriate information about surgery as a risk factor for VTE. Of this 70%, only