Should cancer patients receive thromboprophylaxis to prevent catheter-related upper limb deep vein thrombosis?

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Long-term central venous catheters have considerably improved the management of cancer patients. However, their use has been associated with the occurrence of upper limb deep vein thrombosis (DVT), especially in those patients who require the administration of chemotherapy [1]. The true incidence of upper limb DVT in patients with central venous lines is difficult to estimate, since data from literature are somehow conflicting. In the absence of thromboprophylaxis, Bern et al. [2] found an incidence of DVT, as shown by phlebography, of 37%. Monreal et al. [3] found an even higher incidence. Conversely, in recent case series and randomized studies that adopted ultrasonography or other non-invasive methods to detect upper limb DVT, a much lower rate of this thrombotic disorder has been reported [4–8]. Along with the lower sensitivity of objective non-invasive methods in comparison with phlebography, the introduction of new texture and coating of catheters, as well as new procedures to reduce their invasiveness is likely to account for discrepancies between older and more recent studies [9].

Whether the positioning of an indwelling central venous catheter in cancer patients requires the adoption of thromboprophylaxis is debated. Earlier studies showed that the implementation of prophylactic doses of low-molecular-weight heparin (LMWH) or fixed low-dose vitamin K antagonists (VKA) has the potential to remarkably reduce the rate of this undesirable complication [2, 3]. Accordingly, most international guidelines recommended the adoption of either prophylactic strategy for the prevention of catheter-induced DVT in patients with malignant disease [10, 11]. However, the most recent prospective clinical trials, conducted randomizing wide series of cancer patients to receive either active thromboprophylaxis (LMWH or low-dose VKA) or placebo following the insertion of a central venous catheter, failed to show appreciable benefits from the adoption of pharmacological prophylaxis [4, 6, 9]. These findings have been confirmed by those of recent meta-analyses of available studies [12, 13]. Accordingly, the most recent international guidelines no longer recommend the implementation of systematic prophylaxis in cancer patients who receive the insertion of a central venous line [14, 15]. The decision as to administer or not antithrombotic drugs and how long is left to discretion of the attending physicians, who should evaluate the personal and familiar history of the patient, the carriage of thrombophilia, the presence of comorbidities, and patient’s preferences [16, 17].

The study by Verso et al. [18] adds to the development of parameters than can help to identify those cancer patients who may benefit from the adoption of thromboprophylaxis. In a sub-analysis of their randomized clinical trial published 3 years ago [9], they have been able to identify several conditions independently associated with an increased risk of catheter-related DVT, namely the misplacement of the catheter tip in the upper half of the superior vena cava, the left-sided insertion of the catheter, chest radiotherapy, and the presence of distant metastases. While these findings suggest that it is possible to identify high-risk group of patients in whom to test the benefit-risk ratio of thromboprophylaxis, they may be of immediate relevance to clinical practice.
References