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Editorial

Vascular Access Devices in Cancer Patients: Towards the Next Step

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LACK OF adequate long-term vascular access is one of the most common problems facing oncologists today. Not only is patient discomfort an issue, but there are other important consequences of lack of adequate vascular access, including delay or prevention in delivering intravenous chemotherapy, blood products and parenteral nutrition. Other important consequences of lack of adequate vascular access include extravasation of vesicant drugs into subcutaneous tissues, as well as morbidity and mortality of repeated attempts at percutaneous central line insertion [1, 2]. Currently, there is an increasing number of long-term vascular access devices available to the practising oncologist [1]. Although it has been more than two decades since the introduction of the tunnelled silicone rubber catheter [3] and more than a decade since the introduction of the totally implanted catheter system [4], there is still a lot to learn about the optimal use of long-term vascular access devices in the management of cancer patients. Numerous studies have addressed the type and frequency of complications as well as the durability of different vascular access devices [5–7]. Nevertheless, most of these reports have been retrospective single-institution studies that have included patients with diverse malignancies treated with different modalities of therapy. To date, only a few randomised studies have been performed comparing different long-term vascular access devices in patients with cancer [8, 9]. A recent survey conducted among members of the Multinational Association of the Supportive Care in Cancer (MASCC) demonstrated that a multitude of vascular access devices was being used by practising oncologists and that the criteria to utilise them varied widely among practitioners [10]. It was concluded from this survey that further studies will be necessary to determine the optimal utilisation of long-term vascular access devices.

It this issue of the *European Journal of Cancer*, Biffi and associates (pp. 1190–1194) make a contribution to this important area of cancer therapy by reporting their prospective experience using another totally implantable catheter system in patients with solid tumours. These authors specifically studied a totally implanted system attached to a Groshong catheter and focused on early and late complications of the device in patients with solid tumours. These authors corroborated previous reports utilising other types of totally implanted catheter systems by demonstrating that, in their hands, this device had a low rate of complications and is suitable for long-term use.

Despite the number of reports addressing the use of long-term vascular devices, several key questions remain unanswered. Are results from single institutions applicable to most practitioners? What is the best vascular device for patients with a particular diagnosis? Are the same complications seen in patients with solid tumours and haematological malignancies? When is the best time to start utilising these devices; is it at the initiation of therapy or once the patient has no peripheral vascular access? What approach is the most cost-effective? What is the role of vascular access devices in the ever-growing field of high-dose chemotherapy? In other words, what is the optimal utilisation of vascular access devices? Although these questions might not appear very pressing, it has to be kept in mind that these devices are frequently used in clinical practice and represent a significant proportion of the expense of administering systematic chemotherapy. The amount of resources spent on vascular access devices is evident when the cost of the device, its insertion as well as the costs of managing its complications are taken into account. It has been estimated that in the U.S.A. alone, more than half a million vascular access devices were used in 1994 [1].

Despite the fact that a considerable amount of resources is devoted to vascular access problems in clinical practice, there appears to be little interest from cancer organisations and cooperative groups to study this important area of cancer care. Unfortunately, to answer the above questions will require the study of many patients from different institutions. Because of the nature of these studies, it is likely that answers to most of the above questions will come from multi-institutional or cooperative group studies. Once basic questions such as the nature and frequency of complications in the multi-institutional setting are answered, other more specific questions could be addressed, such as the best approach to deal with specific complications such as infection, thrombosis and catheter occlusion. In addition, randomised studies could help determine what the optimum

strategies are for the best utilisation of vascular access devices, and to evaluate therapeutic alternatives for the prevention and treatment of vascular access device complications.

More studies addressing specific complications and studying patients with a particular diagnosis are being reported, suggesting that a more focused approach to vascular access problems is beginning to emerge [11, 12]. Hopefully this trend will continue and, in the near future, we could learn from prospective, multi-institutional studies that focus on specific patient populations and vascular access complications.

During the last decade, healthcare providers taking care of cancer patients have witnessed significant advances in the area of supportive care, including the development of new and potent anti-emetics, the routine use of haematopoietic growth factors to enhance the recovery of white blood cells after chemotherapy, and the availability of long-acting analgesic preparations that have improved the quality of life of patients with chronic pain. We hope that it does not take another decade to ascertain the optimal use of vascular access devices in patients with cancer and the best approaches to recognise, prevent and manage their complications.

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