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Editorial

# Radiation oncology in Latin speaking countries: A link between Europe and Latin America

## 1. Introduction

The network of international collaboration in science traditionally has been dominated by English speaking countries, but this network is rapidly expanding at the global level. Between 40 and 50 countries appear in the center of the international network in 2011, and almost all nations are nowadays involved in international collaboration.[1]

The origin of Romance languages is Vulgar Latin spoken by the commoners of the Roman Empire. After its fall and fragmentation in the fifth century, the different languages evolved. Beginning in the 15th century, they expanded to other continents due to the Portuguese, Spanish, and French empires.

Therefore, Latin-speaking Europe is considered as the area of Europe where Romance languages are either official, co-official, or significantly used. It is a major linguistic subdivision of Europe alongside Germanic- and Slavic-speaking subdivisions. The Latin European countries are mainly France, Italy, Portugal, and Spain. It also includes some regions from other countries, such as Wallonia in Belgium and the French- and Italian-speaking cantons of Switzerland as well as communities from other non-Romance European countries. Some Eastern Romance languages like Aromanian, Megleno-Romanian and Istro-Romanian are spread across the entire Balkans in small communities within Slavic-speaking countries, Greece and the European part of Turkey. The total population of all the Romance speaking areas in Europe is approximately 190,000,000.

Spain and France are major players in the network in terms of international coauthorship relations. The polar position of Spain and France is noteworthy and can be considered as a consequence of their leading position in collaborations with Mediterranean and Romance language speaking countries.[1] Despite the nearly global use of English as the language of research publication, there are still distinct collaborative groupings of Luso-/Hispanophone nations in Central and South America and Francophone countries in Africa.[2] These networks point to cultural and economic factors underlying regional differentiation in the global patterns.[1]

Latin America is a wide region that includes 41 countries located in North, Central, and South America and the Caribbean region. The estimated population for 2013 is approximately 593 million. Ninety-seven percent of the population speaks Spanish or Portuguese, 64% speaks Spanish and 33% Portuguese, two languages fully intelligible between them.[3–7]

Spain and Portugal have remained a hub between the EU and Latin America.[8] Indeed, Presmanes and Zumelzu[9] reported that coauthorship relations among South American countries are less developed than those between some of these Latin American countries and Spain. Countries with languages other than Spanish or Portuguese are peripheral to this network as are some nations in Central America.[1]

This special issue provides a brief overview of the current state of radiation oncology in Latin speaking countries and the outlook for the future.

## 2. Basic research: method, environment, and opportunity

Great progress has been made in recent years in both clinical and translational research. This is important because research is essential for the continuing development of all medical specialties. Clinical research is a key, because it promotes an environment of scientific excellence and quality within our daily practice, while translational investigation obliges radiation oncologists to become more deeply involved in the field.

Although many Latin speaking radiation oncologists are involved in research promoted by international research groups such as the Radiation Therapy Oncology Group (RTOG) or the European Organization for Research and Treatment of Cancer (EORTC), there is room for improvement in both clinical and laboratory research among Latin speaking countries. We need to make a much greater effort to coordinate research and to expand our participation in international projects. At present, it is safe to say that collaboration and teamwork among Latin speaking countries is not the norm, perhaps in part due to the lack of infrastructure and resources.

## 3. New technologies and special techniques for radiotherapy

Teixeira[10] evaluated the situation of radiotherapy in Latin America in 1990. Consultation was made with representatives of 10 countries, resulting in the responses from 5 of them. These five countries represent approximately 80% of the total area and population of South America. At that time, Linacs only represented one-third of all machines used for external beam radiotherapy in South America. Therefore, the cobalt machine was the basic megavoltage equipment.

Like other medical specialties with a large technological component, continuous technological advances require constant adaptation. All new technologies in radiation oncology have the same aim: to improve the precision, dose and control of radiation to the target to improve tumor control without increasing treatment-related side effects. By now, many of these new technologies have become standard in larger radiotherapy centers: arc therapy, image-guided radiation therapy or stereotactic ablative radiotherapy.

The introduction of new treatment techniques and technology has clearly been very positive for patients and physicians alike. Numerous new techniques, increasingly more advanced machines, and other improvements have made radiotherapy faster and more effective. However, the emergence of new technologies can be a double-edged sword. The technological advancement tends to turn professionals into mechanical robots as they are compelled to become highly mechanized and bureaucratized. We agree with Zietman,[11] the current president of the American Society of Radiation Oncology (ASTRO), who stated: "if radiation oncologists become simply the guardians of a single therapeutic modality they may find that time marches by and, while the techniques will live on, the specialty may not".

In the light of the changes in technology, the ever-increasing access of developing countries to such technology, and its current coverage in Latin America, any efforts in this area should be aimed at improving the quality of the radiotherapy departments and centers that are already in place. This involves developing their technological assets to the fullest, expanding the services that the departments offer, and complying with the minimum quality requirements established for second-level facilities. Each center should be equipped to carry out all stages of the radiotherapy process, from simulation through treatment verification and patient follow-up, with a high level of quality. To achieve this, it should possess both the necessary technology and properly trained staff, required for this purpose. Collaborative efforts should also prioritize helping countries implement national treatment standards for all stages of the radiotherapy process and promoting the implementation of validated quality assurance programs.[12]

## 4. Current challenges and conclusions

Radiation oncology has come a long way over the years, and is now an important and well-established specialty in cancer care. However, many challenges still remain and we must be prepared to face them. One of the major problems resulting from advances in medical treatment using radioactive sources is that frequently equipment is developed and bought by hospitals before they have the trained staff needed to handle it. Aspects of this issue have been examined by a panel of experts brought together in Latin America by the International Atomic Energy Agency (IAEA).

New cancer cases per year were expected to have risen from 600,000 to 790,000 in Latin America in the decade 1990–2000, which is an increase of 30%.[4] Around 100 more teletherapy machines are needed according to IAEA,[5] which implies an increase of 14%. Therefore, health service deficiencies in this area are commonly attributed to a shortfall of equipment. One of the major problems, which is not often highlighted, is that high-tech therapy is often associated with a high cost and, therefore, not always widely available.[13] Nevertheless, it is important to remind that the underuse of radiotherapy should be a matter of concern, given its negative and measurable impact on the survival of patients.[14]

The White Book of Radiation Oncology, published by the Spanish Society of Radiation Oncology (SEOR),[13] provides a comprehensive overview of the current state of the specialty in Spain and the outlook for the future. The book, which includes contributions from more than 50 professionals, was written as a reference for physicians, health-care administrators and hospital managers. This book could be used as a starting point for other Latin speaking countries to provide a comprehensive overview of the present-day situation of the specialty of radiation oncology in Latin speaking countries and could be a useful source for radiation oncologists and administrators of the health care system, as well as for hospital managers.

Teaching programs are insufficient or inexistent in certain areas. Common training programs would help avoid this situation. The European young radiation oncology societies based in Spain (Spanish Young Radiation Oncology Group, SYROG) and France (French Society of Young Radiation Oncologists, SFJRO) could be a platform for developing this task. The main objective of these groups is to motivate young specialists and promote scholarly activity in national and international meetings. These societies also promote understanding among young specialists of the importance of receiving adequate training according to international standards. In addition, these groups instigate and help young specialists to obtain international training and potentially set up new national and international protocols in the field of radiation oncology.[15,16]

The Latin language is a bridge between Europe and Latin America, but both continents must continue to strengthen that role. Latin speaking countries should be open to collaborate with other international scientific societies, not only within Europe and Latin America, but also with others outside the Latin borders of the speaking world such as those in North America and Asia.

To conclude, the aim of this editorial is to highlight the relevancy of Latin speaking countries in international research and to illustrate what could be accomplished if Latin speaking researchers apply their knowledge, skills, and resources in a focused way. There is no reason why we should not be at the forefront of research and publishing in our respective areas of expertise.[17] The opportunity to provide leadership on a wider world stage is available, but it is up to us to seize the

initiative, to expand our horizons and, above all, to act with energy, passion, and conviction.

## Conflict of interest

None declared.

## Financial disclosure

None declared.

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