

COMMENTARY

Management plan for breast cancer during the COVID-19 pandemic. A single-institution alternative to treat early breast cancer patients in a short time

In Chile, the number of new COVID-19-positive cases increased to 41 428 cases as of May 16, 2020.¹ Under the pandemic crisis, different countries have implemented several safety and security measures, including quarantine of positive and suspected cases.² Nevertheless, patients under active cancer treatment need to commute to their medical institution to receive treatment and care, increasing their risk to get infected by COVID-19.

Chile is following international recommendations for treating breast cancer patients. In general, radiotherapy continues, with each multidisciplinary team assessing cancelation or changes in the

scheme case by case. BCS followed by EBRT is a standard procedure for patients with early-stage breast cancer, which is performed whenever possible, postponing definitive mastectomy and/or reconstruction until further notice. However, completing several weeks of radiation therapy sessions under the current COVID-19 pandemic situation is complicated, especially for older patients with comorbidities and who live far away from radiation oncology centers.³

Breast intraoperative radiation therapy (IORT) significantly reduced the course of treatment. One of the methods to deliver IORT is by intraoperative electron radiation therapy (IOERT), allowing the

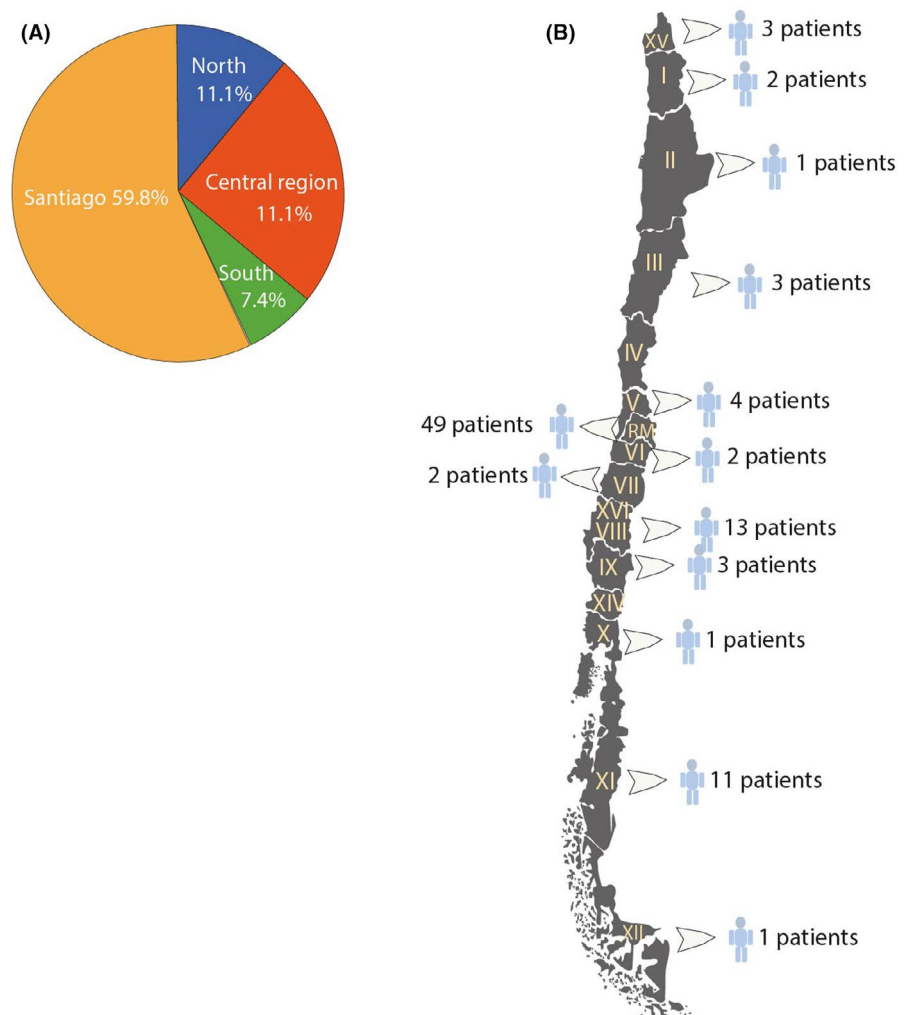


FIGURE 1 Distribution of patient across Chile. (A) Patients in Santiago, north, central, and south of Chile. (B) Number of patients in the different Chilean regions [Color figure can be viewed at wileyonlinelibrary.com]

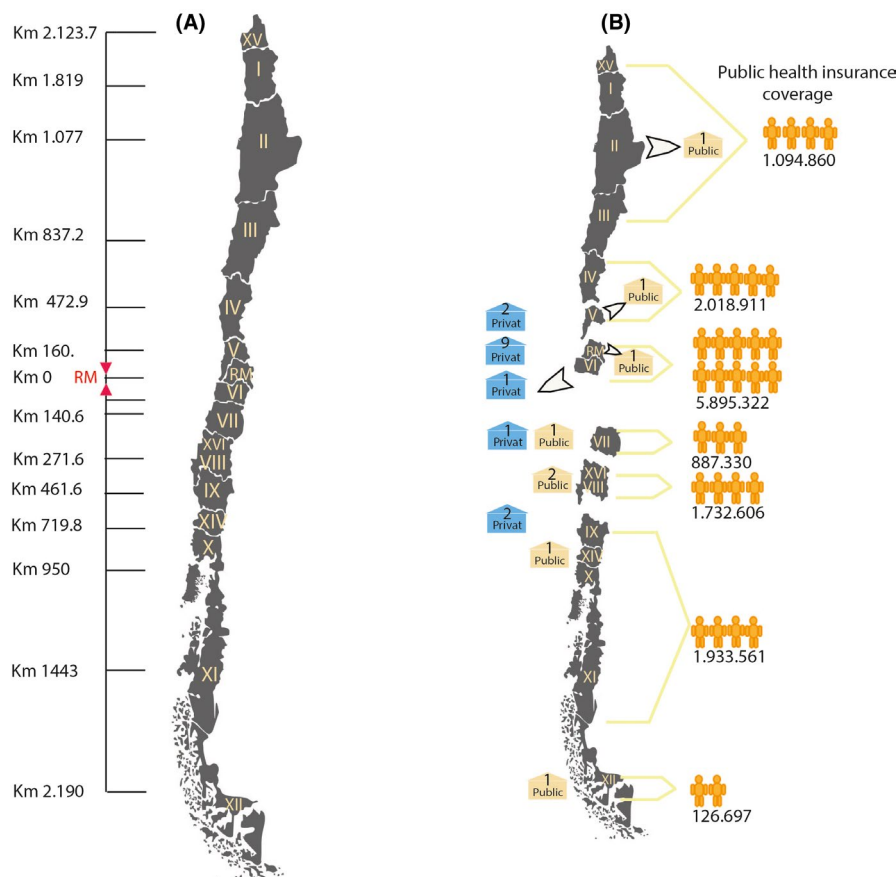


FIGURE 2 Chilean geography and radiotherapy coverage. (A) Distance from regions to Santiago. (B) Distribution and coverage of radiotherapy centers [Color figure can be viewed at wileyonlinelibrary.com]

delivery of a single dose of 21 Gy, which also avoids most skin damage.⁴ The ELIOT trial demonstrated that the overall survival between EBRT and IOERT in a selected group of patients did not differ (median follow-up of 5.8 years), and the local recurrence rate of IOERT is not inferior to EBRT.⁵ IOERT can be considered as a safe treatment, and its use is endorsed by the American Society of Radiation Oncology (ASTRO) guidelines.

In view of the pandemic crisis, IOERT appears to be an attractive option for early-stage breast cancer patients—especially for those patients that have limited access to radiotherapy centers. Therefore, we evaluated our local experience with IOERT and analyzed the distribution of radiation oncology centers throughout Chile.

Our retrospective analysis included 81 registered patients diagnosed with early-stage breast cancer and treated at our institution (FALP) in Santiago from 2012 to 2016, ranging from 11 to 24 patients per year. All the patients received IOERT after surgery and were selected following the ASTRO/ESTRO guidelines.⁴ Patients were over 50, (66.14 ± 9.03), and 56.79% of them came from Santiago (Figure 1A). We also treated patients from the extreme north and south of Chile (Figure 1B). Tumor extent was determined by mammography, ultrasonography, and contrast-enhanced magnetic resonance imaging. Final tumor size was determined by intraoperative pathological analysis. Once the tumor was removed, lead shielding was used to protect the pectoral muscle, lung, and heart from

radiations. The IOERT treatment consisted of a single 21-Gy dose using a Liac Sordina[®] accelerator. After completing the IOERT protocol, the collimator and the shield were removed, and the breast was reshaped to avoid cosmetic defects. Patients were discharged on the same day than surgery, and IOERT were performed. To date, none of the treated patients has experienced local recurrence.

Access to treatment affects treatment choice and quality of life^{4,5} and may be compromised under the current pandemic. Chilean radiation oncology centers are few and unequally distributed. Chile is an extremely long (4329 Km, Figure 2A) and thin country, with 17.6 million inhabitants.⁶ In total, there are 23 radiation oncology centers, eight of them are public and attend mainly patients covered by public insurance. Of the eight public radiation oncology centers, only one is located in the north of the country (covering 300 904.3 km² and approximately 1 094 860 public-insured inhabitants). Two centers are located in the south and are separated by approximately 1500 km; both cover 363 531 km² and 2 060 258 public-insured inhabitants, whereas 50% of public and 60% of private radiation oncology centers are located in Santiago (Figure 2B).⁷ Of the total radiation oncology centers, FALP is the only one that can perform IOERT.

Treatment with IOERT results useful when we consider that the Chilean population is dispersed over a vast geographical area, and factors such as age, ethnic, socioeconomic status, and accessibility to treatment might hamper treatment adherence. Moreover, IOERT

contributes to reducing the risks of COVID-19 for both patients and health personnel, especially considering that a COVID-19-positive case within the health staff may jeopardize the functioning of a whole radiation oncology center.

Even though IOERT is not a standard procedure, in our institution, we have established this strategy, regardless of the patient's health insurance system. This model helps families and patients that need to travel a long distance for treatment to cope with cancer burden, especially under the present pandemic circumstances. Despite the limited number of patients included in the study and that the follow-up time is still ongoing, our experience provides valuable evidence, especially considering the present COVID-19 pandemic situation and the socioeconomic and geographical characteristics of Chile.

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CONFLICT OF INTEREST

Authors declare that they have no conflict of interest.

Badir Chahuan MD¹ 
 Cristian Soza-Ried PhD^{1,2} 
 Ariel Fariña MD¹
 Felipe A. Calvo MD³
 Filippo Marangoni PhD¹
 Ana María Ciudad MD¹
 Mabel Hurtado MD¹
 Luis Marin MD¹
 Karla Torzsok PhD¹
 Hugo Marsiglia MD¹

¹Instituto Oncológico, Fundación Arturo López Pérez, Santiago, Chile

²Escuela de Bioquímica, Facultad de Ciencia, Universidad San Sebastián, Santiago, Chile

³Departamento de Oncología Radioterápica, Clínica Universidad de Navarra, Madrid, España

Correspondence

Badir Chahuan, Instituto Oncológico, Fundación Arturo López Pérez, Avenida José Manuel Infante 805. 7500691, Providencia RM, Santiago, Chile.
 Email: badir.chahuan@falp.org

ORCID

Badir Chahuan  <https://orcid.org/0000-0003-3133-6706>

Cristian Soza-Ried  <https://orcid.org/0000-0001-9490-4083>

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