

# Patterns of Radiotherapy Practices in Breast Cancer in Asia: A Challenge in Diversity

Authors: **M. Calaguas<sup>a</sup>**, J. Flores<sup>b</sup>, C. Yu<sup>b</sup>

a. Department of Radiation Oncology, St Luke's Medical Center, Philippines

b. Department of Radiotherapy, Jose R. Reyes Memorial Medical Center, Rizal Avenue, Sta Cruz, Manila, Philippines

\* Corresponding author: miriamcalaguas@yahoo.com

## Background and Objective

The aim of this study is to give an overview of the current patterns of practice in radiotherapy for breast cancer management in Asia.

## Methods

A survey was conducted during the International Atomic Energy Agency (IAEA)/ Regional Radiation Oncology Societies (RCA) Kick-off and Project Coordination Meeting in Gunma, Japan last May 2018.



Figure 1: Participants of International Atomic Energy Agency (IAEA)/Regional Radiation Oncology Societies (RCA) Kick-off and Project Coordination Meeting Gunma, Japan last May 14-18, 2018.

## Results and Discussion

The survey had a 95% response rate. Out of the 19 respondents, 18 respondents were from Asia and 1 from Oceania. Majority of the participants came from lower middle income countries (56%) and are government operated facilities (89%). Most of the breast cancer patients were diagnosed with locally advanced disease (78%). Surgical procedures for early staged breast cancer (stage I-II) were usually via breast conserving surgery (71%) while locally advanced stage diseases were mostly treated with modified radical mastectomy (90%).

In terms of radiotherapy, early and locally advanced breast cancer patients were predominantly treated using external beam radiation in 82% and 95%, respectively. Majority of which were 3D-CRT in 45% and 41%, respectively. Most radiation oncologists still utilize conventional fractionation (mostly 50 Gy in 25 fractions) in treating early (50%) and locally advanced diseases (60%). However, hypofractionation (mostly 40 Gy in 15 fractions) are increasingly being adopted in 45% and 50%, respectively. Timing of radiotherapy usually starts at 4-6 weeks after chemotherapy or surgery (83%) and more than half reported to deliver adjuvant radiotherapy after breast reconstruction or flap placement. Most common acute side effect of breast radiotherapy is radiation dermatitis (94%) while the most common chronic side effect is telangiectasia (47%).

## Conclusions

Patterns of practice for breast radiotherapy are widely varied in Asia. Technological advancements, accessibility to treatment, socioeconomic status, and, physician and patients' choice contribute to the different practices employed in breast cancer radiotherapy in Asia.

Figure 2. World bank country Classification based on 2017 income per capita

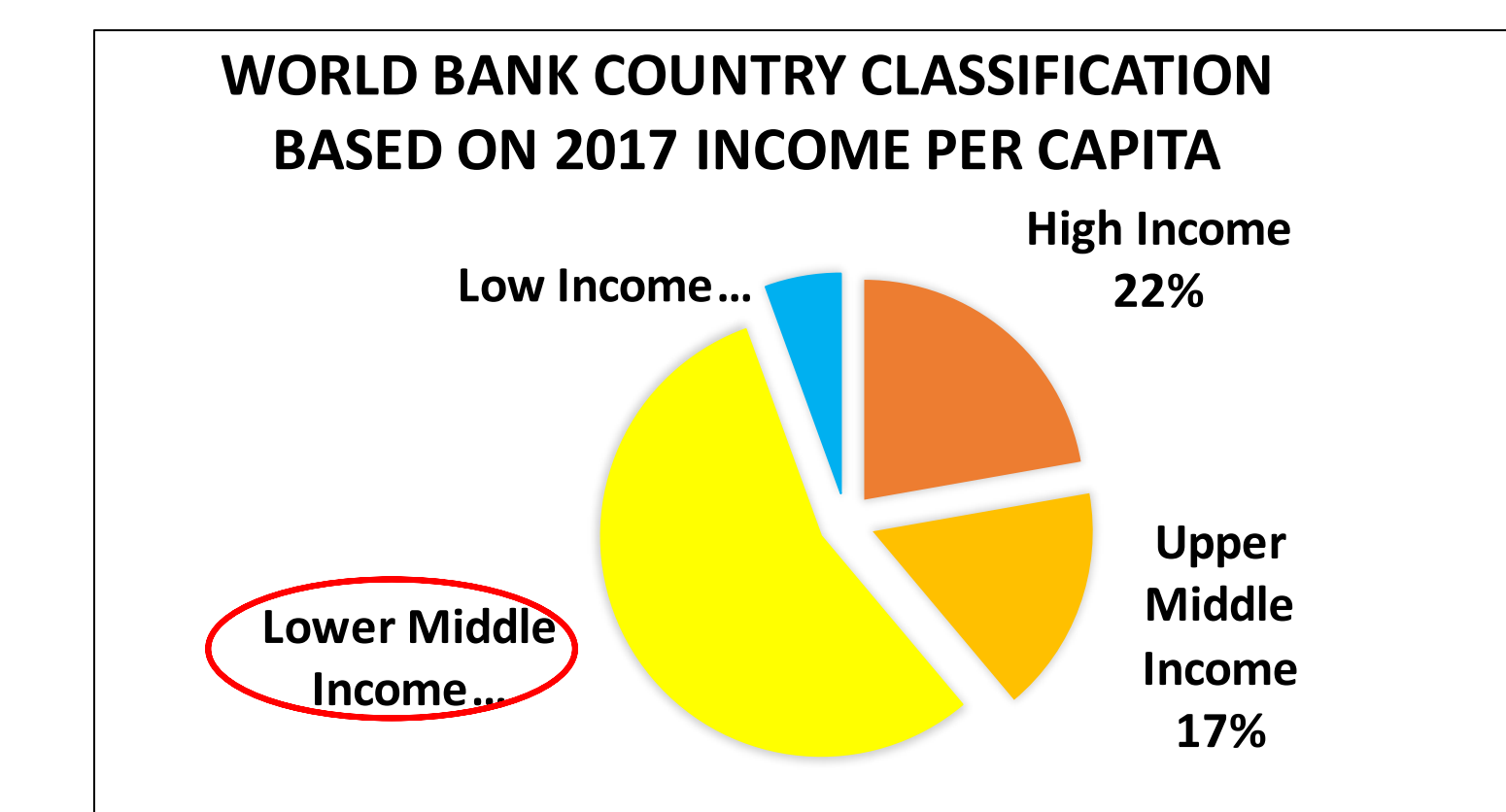


Figure 3. Distribution of Breast Cancer Stages Treated in Asia-Oceania

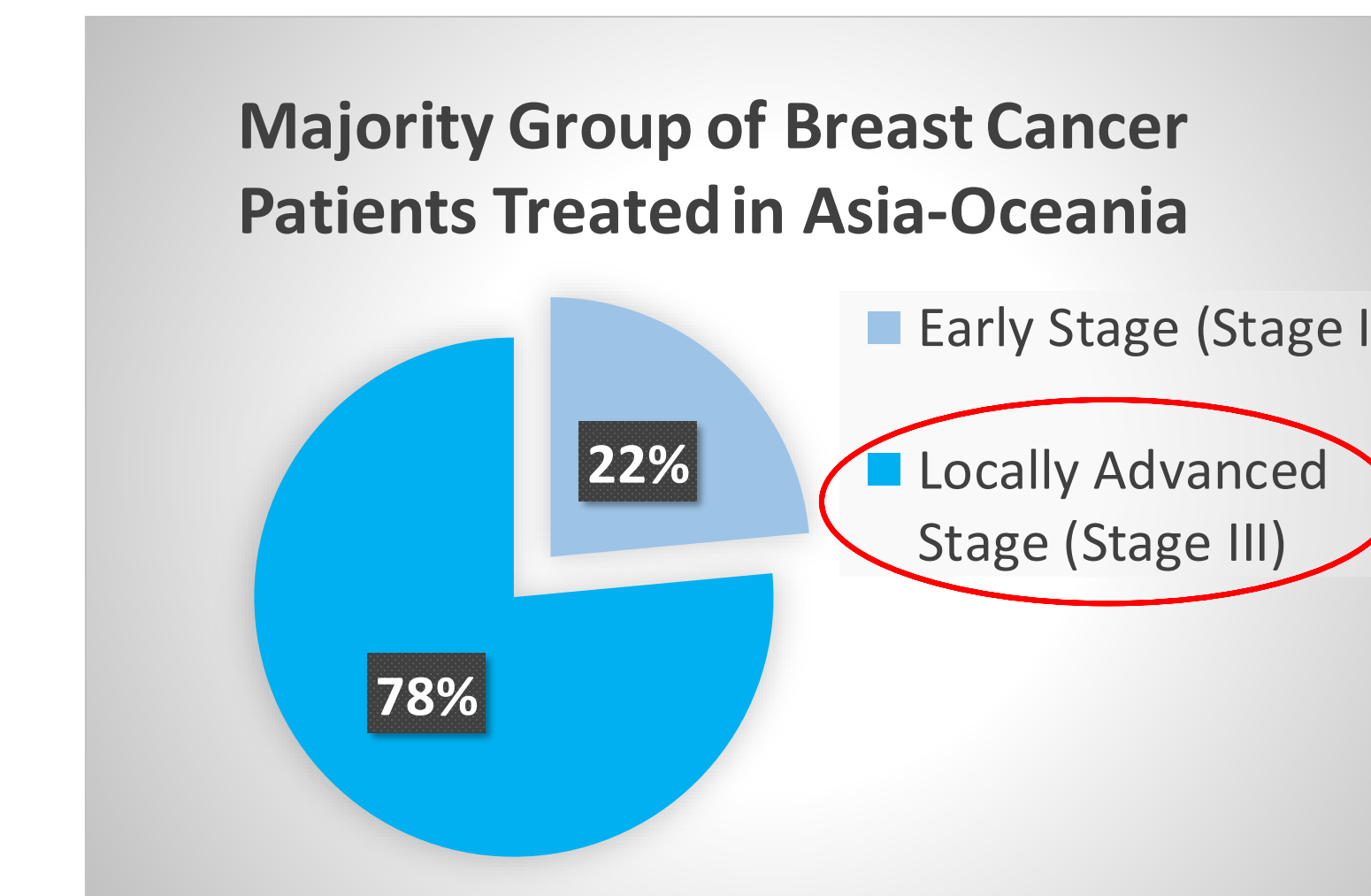


Figure 4. Distribution of Surgical Procedures done for Early and Locally Advanced Breast cancer

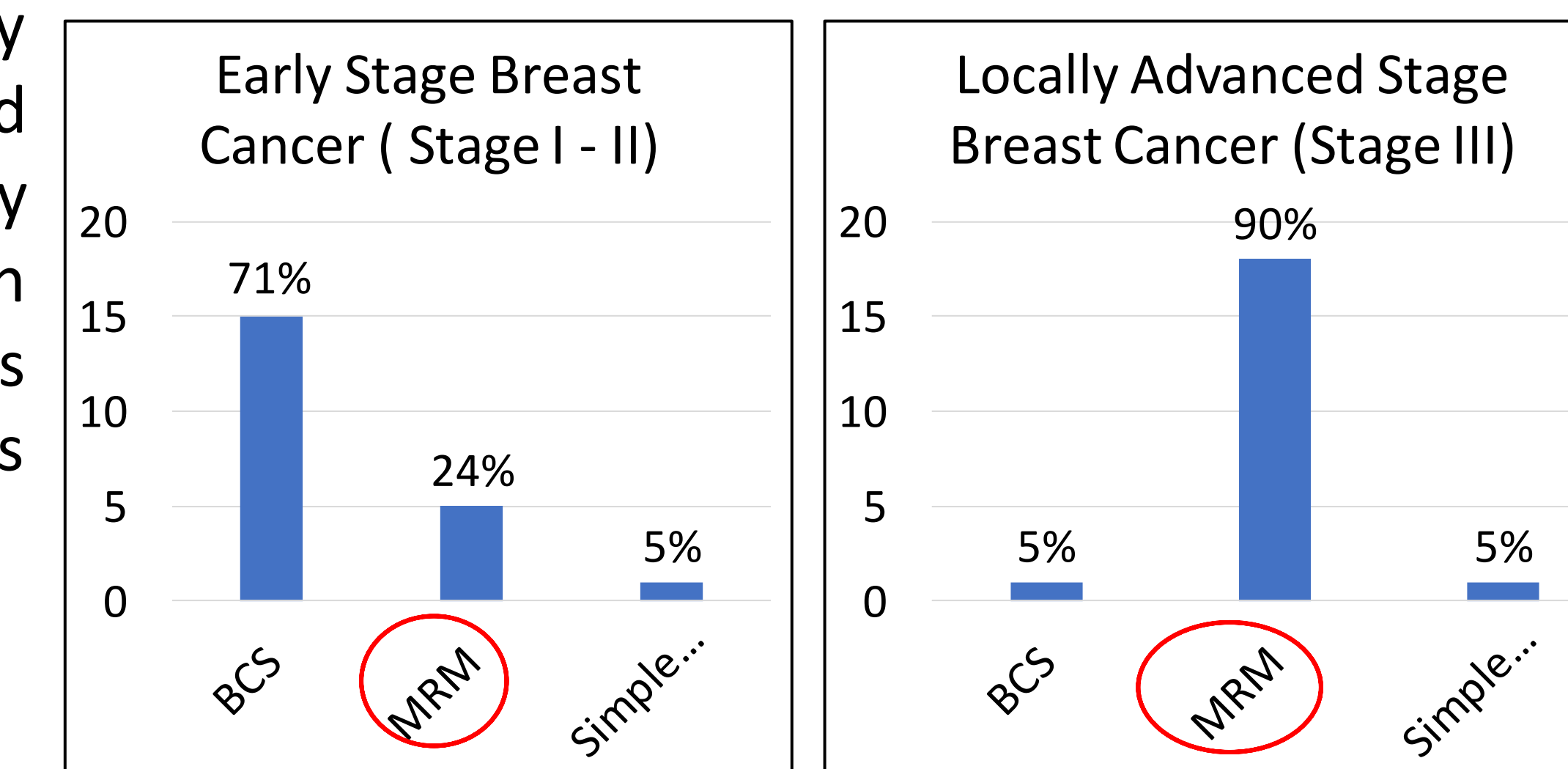


Figure 5. Distribution of Radiation Treatment Modalities for Early and Locally Advanced Breast cancer

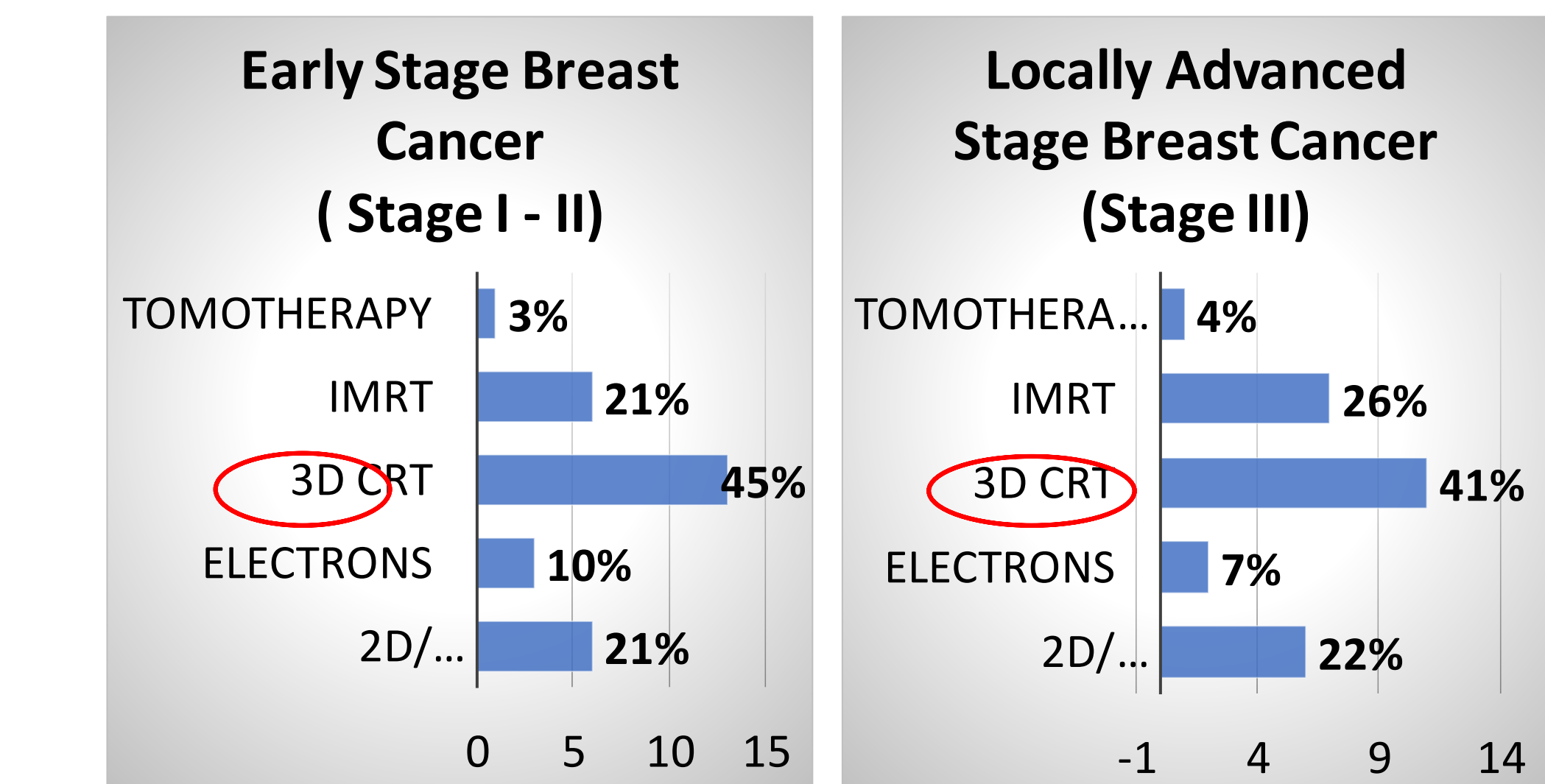
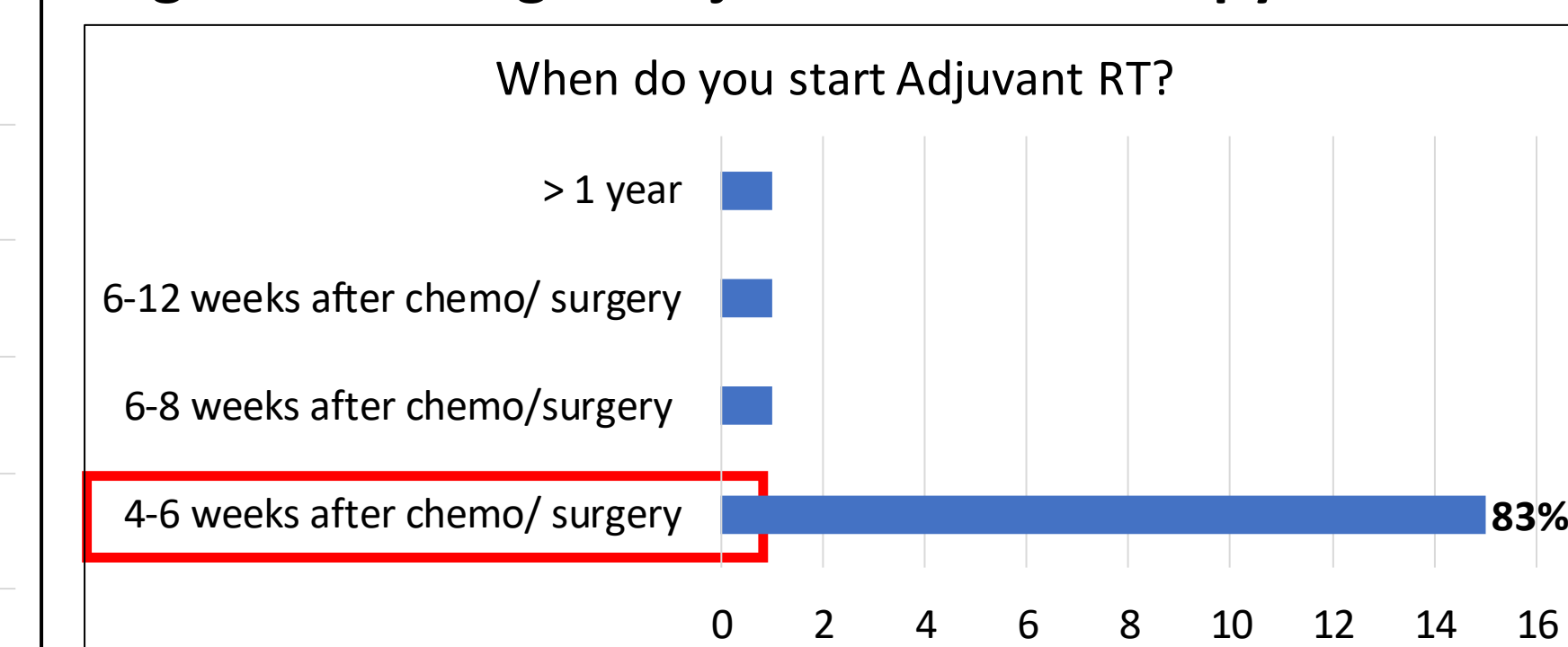


Table 1. Radiation Dose and Fractionation for Early and Locally Advanced Breast cancer

	Fractionation Scheme	Early Stage Breast Cancer (Stage I - II)		Locally Advanced Stage Breast Cancer (Stage III)	
		Number	Percentage	Number	Percentage
Conventional	50.4 Gy/28 Fx/1.8 Gy	1	5%	1	5%
	50 Gy/25 Fx/2 Gy	7	33%	9	45%
	60 Gy/30 Fx/2 Gy	3	14%	2	10%
Hypofractionated	40 Gy/15 Fx/2.67 Gy	5	24%	6	30%
	42.5 Gy/16 Fx/2.67 Gy	4	19%	1	5%
	50 Gy/17 Fx/2.9 Gy	1	5%	1	5%

Figure 5. Timing of Adjuvant Radiotherapy



## References

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