



Contribution ID: 43

Type: Poster

## Trend of availability and use of Intensity-Modulated Radiotherapy(IMRT) in Thailand, statistical report from 2008 to 2015.

Tuesday, 20 June 2017 10:40 (5 minutes)

### Introduction of the study

Since the introduction of IMRT in late 1990, it gradually becomes a standard or recommended radiotherapy techniques for many kinds of cancer. However, its implementation needs a lot of resources which preventing its availability in developing country like Thailand. This study is aimed to report the growth of availability and use of Intensity-Modulated Radiotherapy (IMRT) in Thailand and tried to find the resource factors which are associated with the use of IMRT.

### Methodology

Annual statistical reports published by Thai Association of Radiation Oncology(THASTRO) were used for analyses. Availability of IMRT-capable machines were drawn from machine statistics and the use of IMRT was analysed by number of patients, number of patients per available machines and as a percentage of IMRT patients. Analyses were performed in overall data and grouped by geographic location and type of radiotherapy center. Manpower and other resource factors were also analyses.

### Results

The first implementation of IMRT in Thailand was in 2003 but the annual statistical reports were available only from 2008 to 2015. Overall from 2008 to 2015, Availability of IMRT-capable machines was increasing from 9 machines to 42 machines and the use of IMRT was increasing from 615 patients (2.5%) to 4083 patients(12.52%). When considered with geographic distribution, the growth of IMRT availability and use were mostly observed in Bangkok (Capital of Thailand). IMRT-capable machines in Bangkok was increasing from 7 machines to 28 machines compared to 2 machines to 14 machines in the rest of country. Growth of IMRT use was also different, it was increasing from 559 patients(5.22%) to 3296 patients(19.81%) in Bangkok compared with 56 patients(0.41%) to 787 patients(4.92%) in the rest of country. Interestingly, the efficiency of IMRT use per IMRT-capable machines were better in Bangkok, the average number of IMRT patients per machine in 2015 were 106.61 and 51.65 in Bangkok and the rest of country, respectively( $p=0.05$ ). This difference might be explained by the significant higher workload for radiation oncologist and medical physicist, the average number of patients per one radiation oncologist and medical physicist were 158.3 and 223.22 for centers in Bangkok compared to 316.09 and 552.82 for centers in the rest of country ( $p=0.0024$  and  $0.0058$ , respectively)

### Conclusion

Availability and use of IMRT in Thailand was gradually increased but mostly concentrated in Bangkok. This should urge the attention of policy makers to improve the assessibility and distribution of IMRT in Thailand.

### Acknowledgement

The authors thank Dr. Temsak Phungrassami and all THASTRO coordinators of THASTRO annual survey for the statistic reports.

## Country

Thailand

**Institution**

Ramathibodi Hospital

**Primary author:** PATTARANUTAPORN, Poompis (Ramathibodi Hospital)

**Co-authors:** DHANACHAI, Mantana (Ramathibodi Hospital); DANGPRASERT, Somjai (Ramathibodi Hospital)

**Presenter:** PATTARANUTAPORN, Poompis (Ramathibodi Hospital)

**Session Classification:** Tuesday morning - Poster Presentations - Screen1

**Track Classification:** Radiotherapy in Cancer Control Plans