



Intraoperative radiotherapy (IORT) in breast cancer: analysis of 7,054 cases from ISIORT database

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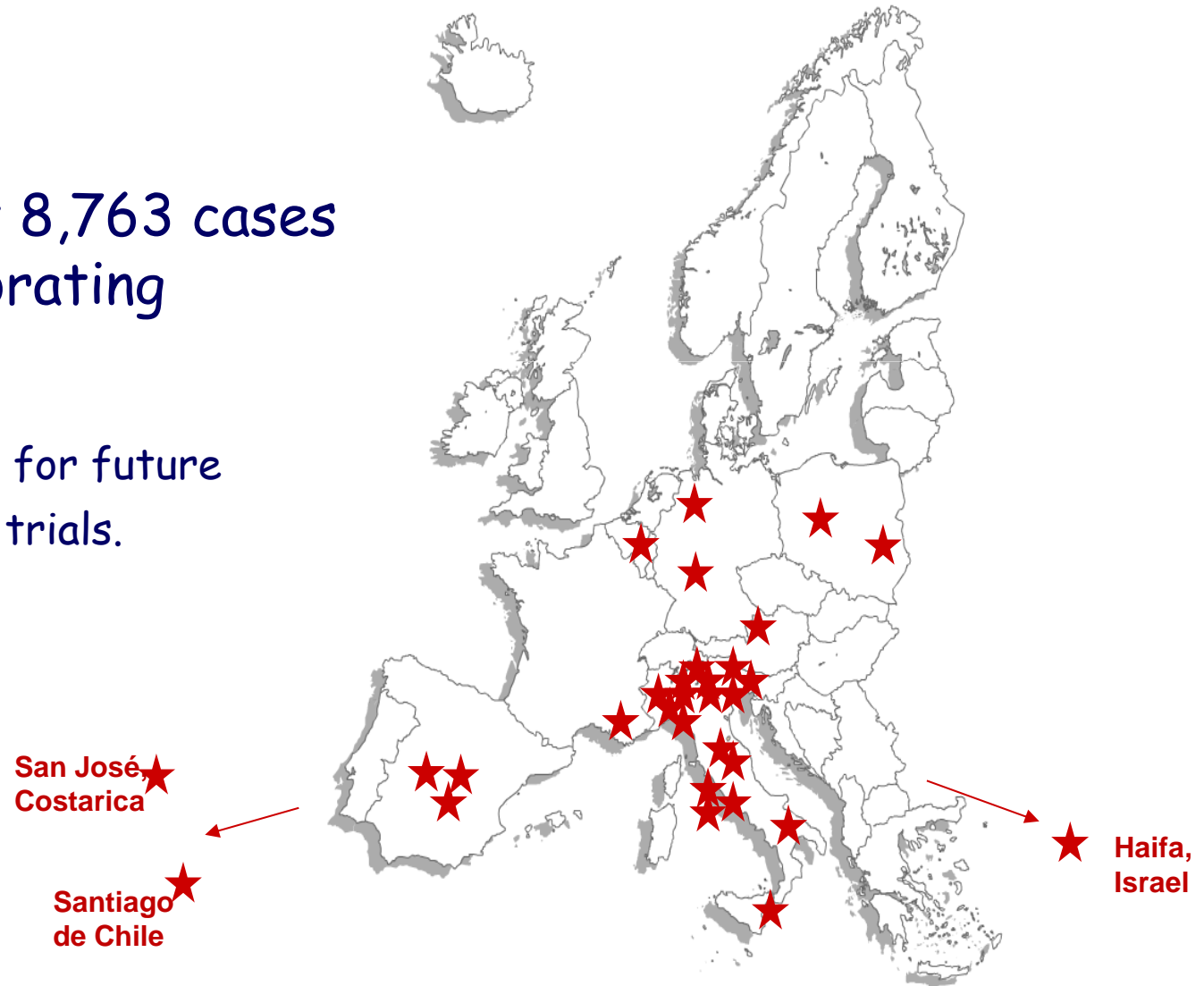


ISIORT – EUROPE Registry

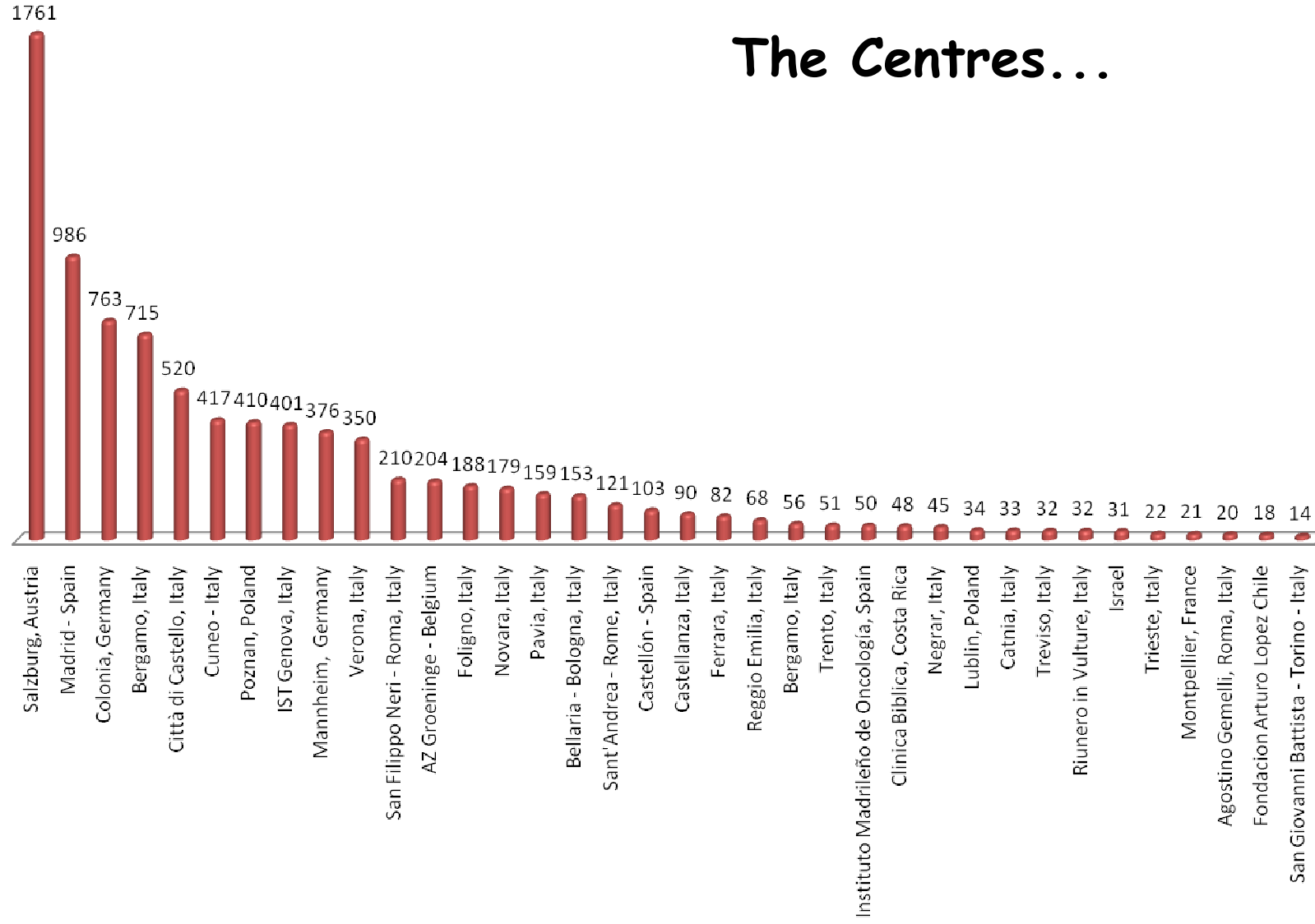


Collected about 8,763 cases from 36 collaborating centres.

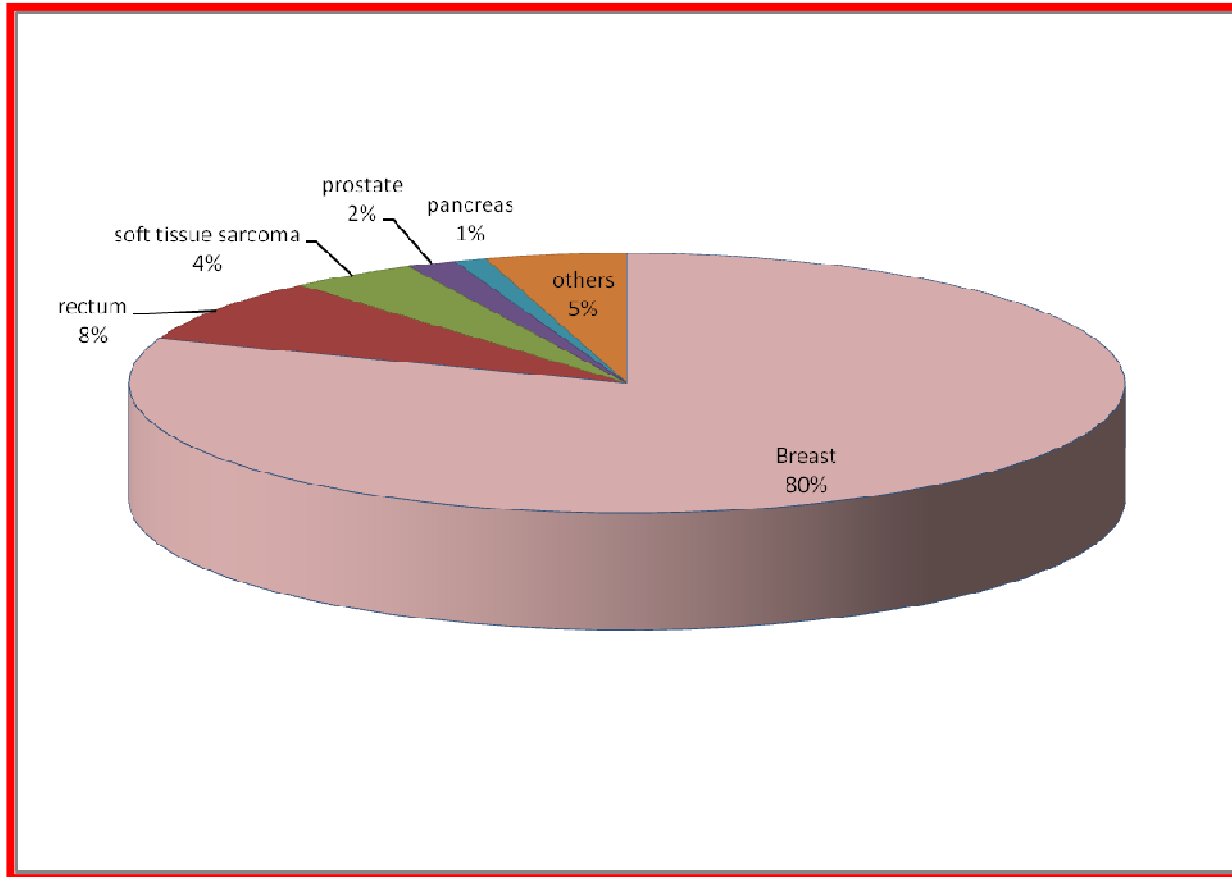
This could be a basis for future collaborative clinical trials.



The Centres...



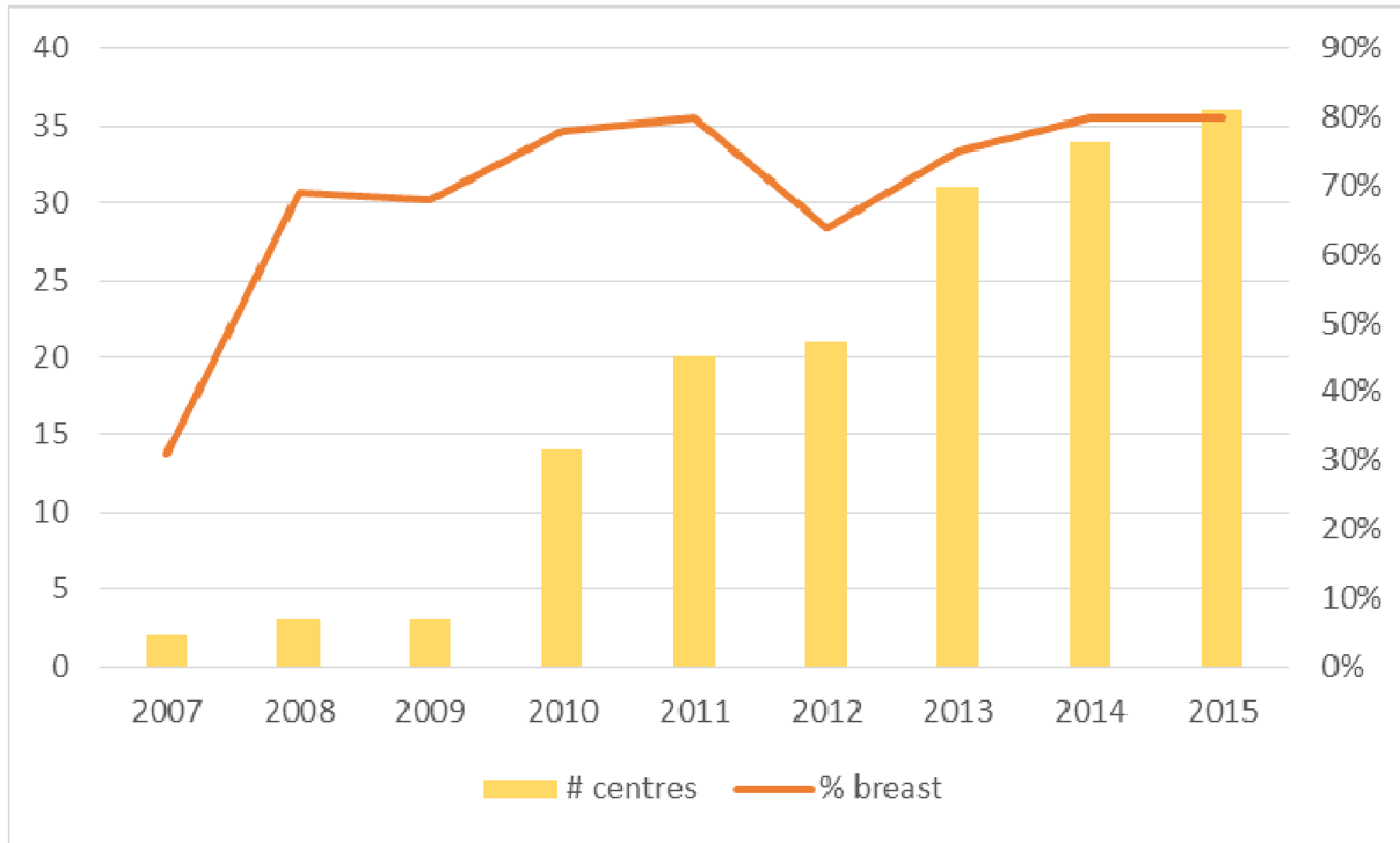
Tumour types



What are others?

Tumor sites	#
Esophagus	53
Stomach	65
Brain	34
Cervix-vagina	29
Head and neck	28
Uterine body	17
Ovary	16
Bowel	12
Lymphnodes	9
Kidney	8
Abdominal	8
Biliary tract	8
Lung - lung apex	6
Sacrum	6
Adrenal glands	6
Bladder	5
Spine	2
Testis	2
Anus	1
Chordoma	1
Colangiocarcinoma	1
Liver	1
Ear	1
Vulva	1

Percentage of breast IORT out of all IORT



Breast cancer (n = 7,054 cases) Patients & Tumour characteristics

Median age: 61.1 yrs (16 - 90)

♀ 99.6%

♂ 0.4%

T1: 81.8% - T2: 16.1%

Ductal carcinoma: 96.5%

Lobular carcinoma: 3.5%

100% treatments with "curative intent"

111 cases: recurrent (previously EBRT → re-treatment with IORT)

37 cases: R+ surgery

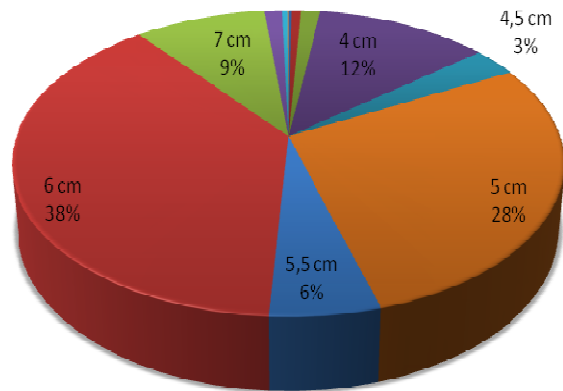
52.2% surgery + IORT

47.8% surgery + IORT + EBRT

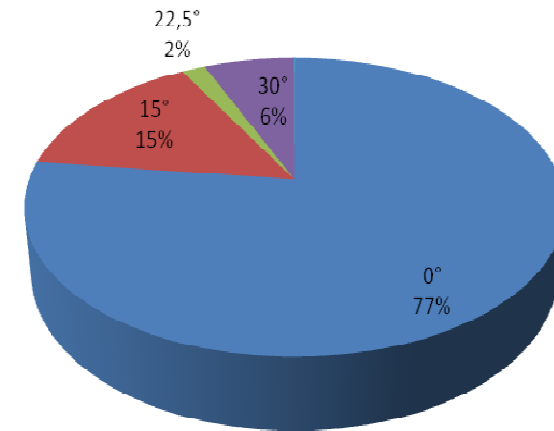
Breast cancer (n = 7,054 cases)

Technical aspects (general overview)

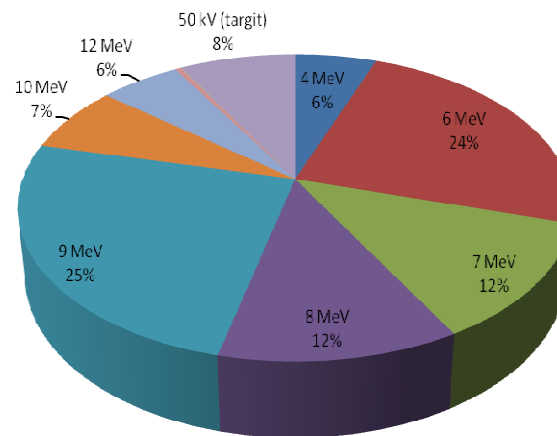
Breast - Diameter of applicator



Breast - Bevel angle



Breast - Beam Energy



IOERT

- 92%
- 4 - 12 MeV
- Collimator diameters: 3.5 - 10 cm
- **IORT timing**
 - 96% after surgery
 - 4% prior surgery
- **IORT modality**
 - 52.2 Gy single shoot
 - 16 - 21 Gy
 - 47.8 Gy boost
 - 8 - 12 Gy

Targit

- 8%
- 50 KV
- Collimator diameters: 2.5 - 5 cm
- **IORT timing**
 - 99.6% after surgery
 - 0.4% prior surgery
- **IORT modality**
 - 98% single shoot
 - 20 Gy
 - 2% boost
 - 6, 8, 12 Gy

TRENDS OVER TIME: Clinical Trials

4,256 (60.3%) Cases in trials from 29 centres

1,865 (43.8%) single shot

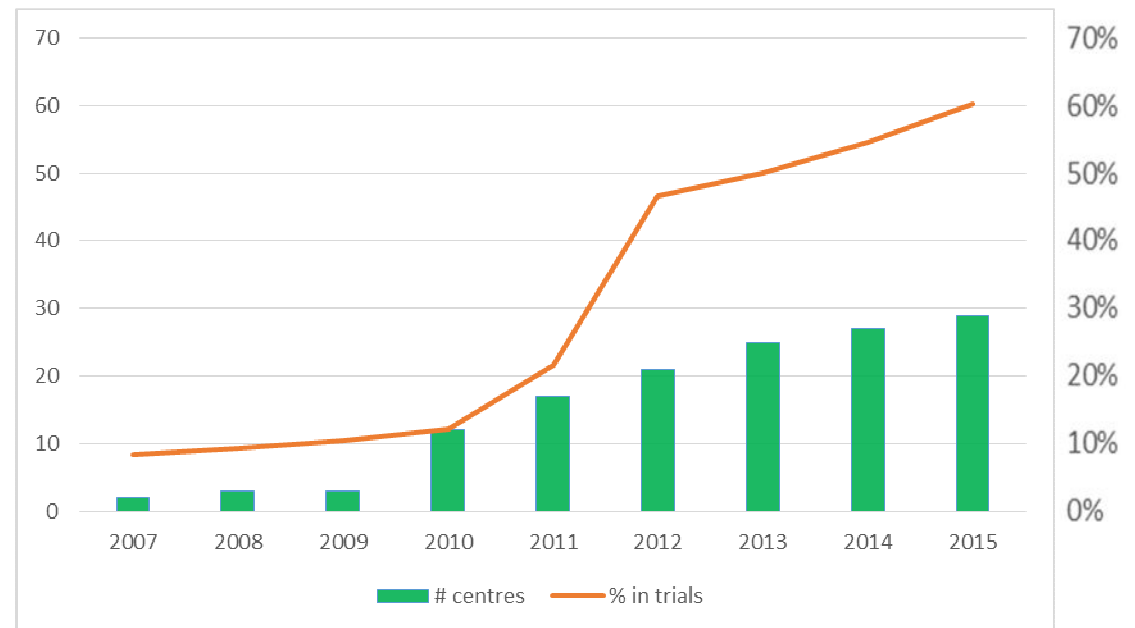
2,391 (56.2%) boost

2,798 (39.7%) Cases out of trials

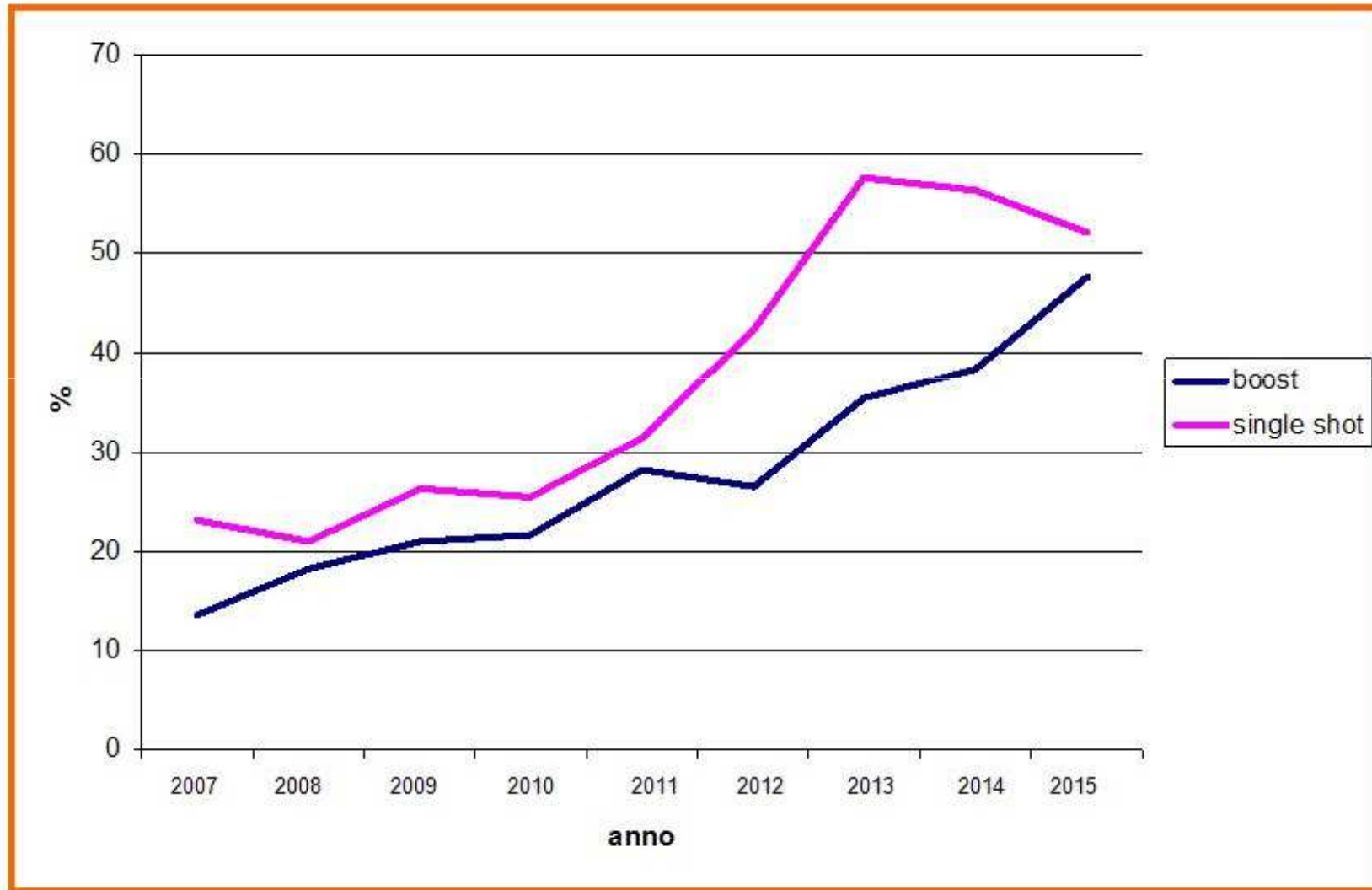
1,055 (37.8%) single shot

1,743 (62.3%) boost

N. of centres that treated breast cancer patients in clinical trials and % of breast cancer patients included in clinical trials



Trends over time: SINGLE SHOT vs. BOOST



Conclusions

- The number of collaborating centres increased over time from 3 in 2007 to 21 in 2011 and to 36 in 2015.
- These data are a report on a large clinical experience of patients treated with IORT worldwide and gives an overview on practice oriented patients selection.
- The percentage of patients treated for breast cancer is about 80%, quite stable over the last few years. The inclusion of patients in clinical trials is increasing and the percentage of patients treated by boost is also increasing.
- The collected data could serve as a basis for designing clinical trials in an effort to define the contribution of IORT in tailored multimodality approach.



ISIORT – EUROPE Registry



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Thanks !