



# Changes in clinical and pathological characteristics of newly diagnosed breast cancer patients in Hungary: A 10-year retrospective analysis

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## Background

- Breast cancer (BC) is the most common cancer in the female population in Hungary [1]
- The receptor status of breast cancer significantly affects the prognosis and treatment options of the disease [2]

## Objective

- To analyze the clinical and pathological characteristics of newly diagnosed BC patients and to identify changes in these parameters at a university center in Hungary between 2010 and 2020

## Methods

- A retrospective analysis was performed using the DataLake clinical database which contains detailed data on in-/out-patient services of all patients examined and/or treated at the University of Pécs
- All patients newly diagnosed with BC (ICD code: C50) from January 2010 to December 2020 were included in the analysis
- The HR (i.e., estrogen and progesterone receptors) and HER2 (human epidermal growth factor receptor 2) status were extracted from patients' records
- Based on HR and HER2 status cases were classified into HR-negative/HER2-negative, HR-positive/HER2-negative, HR-negative/HER2-positive and HR-positive/HER2-positive subtypes
- Data management and statistical analysis were performed using R software; descriptive statistics and nonparametric tests were applied

## Results

- 4,001 patients had medical care because of BC at the University of Pécs during the study period
- 3,298 patients were newly diagnosed with BC
- 2,715 patients had data on HR and HER2 status
- The number of newly diagnosed BC patients per year ranged between 254 (in 2019) and 343 (in 2014) (Figure 1)
- The median age of newly diagnosed patients decreased significantly during follow-up (in 2010: 71 years, in 2020: 65 years;  $P < 0.001$ ) (Figure 2)
- The majority of patients had HR-positive/HER2-negative BC (Figure 3)
- There was an increasing trend in HER2-positive cases (in 2010: 10.16%, in 2020: 15.76%) (Figure 4)
- There was no differences in stage distribution among newly diagnosed BC patients between 2010 and 2020 (Table 1)

Table 1. Stage distribution among newly diagnosed BC patients per year

Year	is	IA	IB	IIA	IIB	IIIA	IIIB	IIIC	IV
2010	0,029	0,442	0,019	0,288	0,135	0,043	0,014	0,024	0,000
2011	0,018	0,406	0,012	0,276	0,159	0,071	0,018	0,035	0,006
2012	0,019	0,428	0,000	0,284	0,107	0,098	0,028	0,033	0,005
2013	0,023	0,509	0,006	0,269	0,097	0,057	0,011	0,029	0,000
2014	0,032	0,511	0,014	0,312	0,054	0,050	0,018	0,009	0,000
2015	0,009	0,471	0,009	0,260	0,148	0,063	0,027	0,009	0,004
2016	0,017	0,392	0,017	0,306	0,164	0,039	0,022	0,030	0,013
2017	0,010	0,429	0,031	0,276	0,138	0,066	0,020	0,031	0,000
2018	0,004	0,441	0,017	0,306	0,109	0,070	0,035	0,013	0,004
2019	0,005	0,417	0,021	0,260	0,167	0,073	0,031	0,026	0,000
2020	0,020	0,450	0,030	0,285	0,110	0,055	0,025	0,020	0,005

## Conclusion

- The decreasing trend in the age at diagnosis of BC and the increasing trend of HER2-positive cases should be considered by clinicians and policymakers in the screening process and management of BC
- Further studies are warranted to explore the underlying factors behind these patterns

Figure 1. Number of newly diagnosed BC patients per year

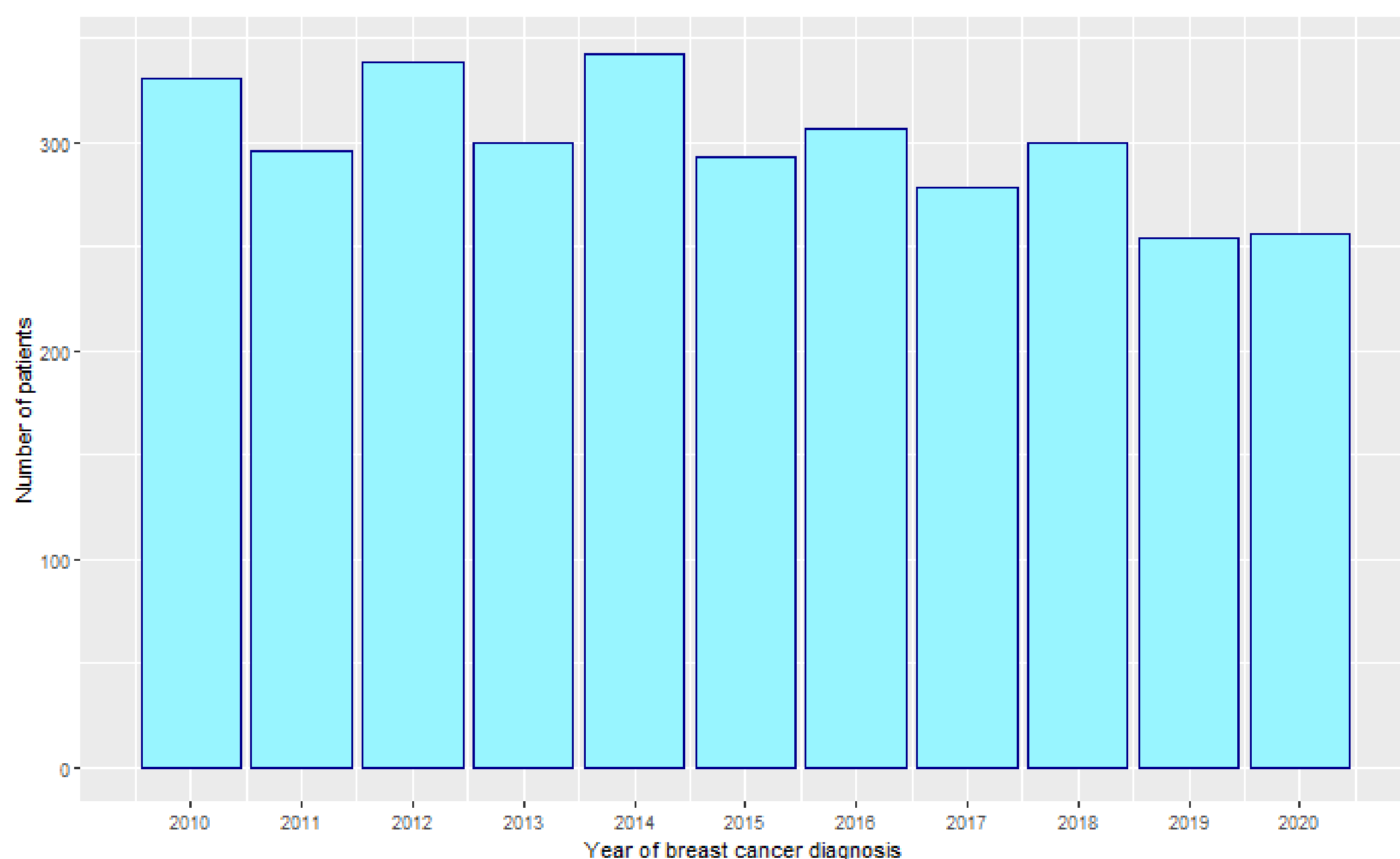


Figure 2. Median age of newly diagnosed BC patients per year

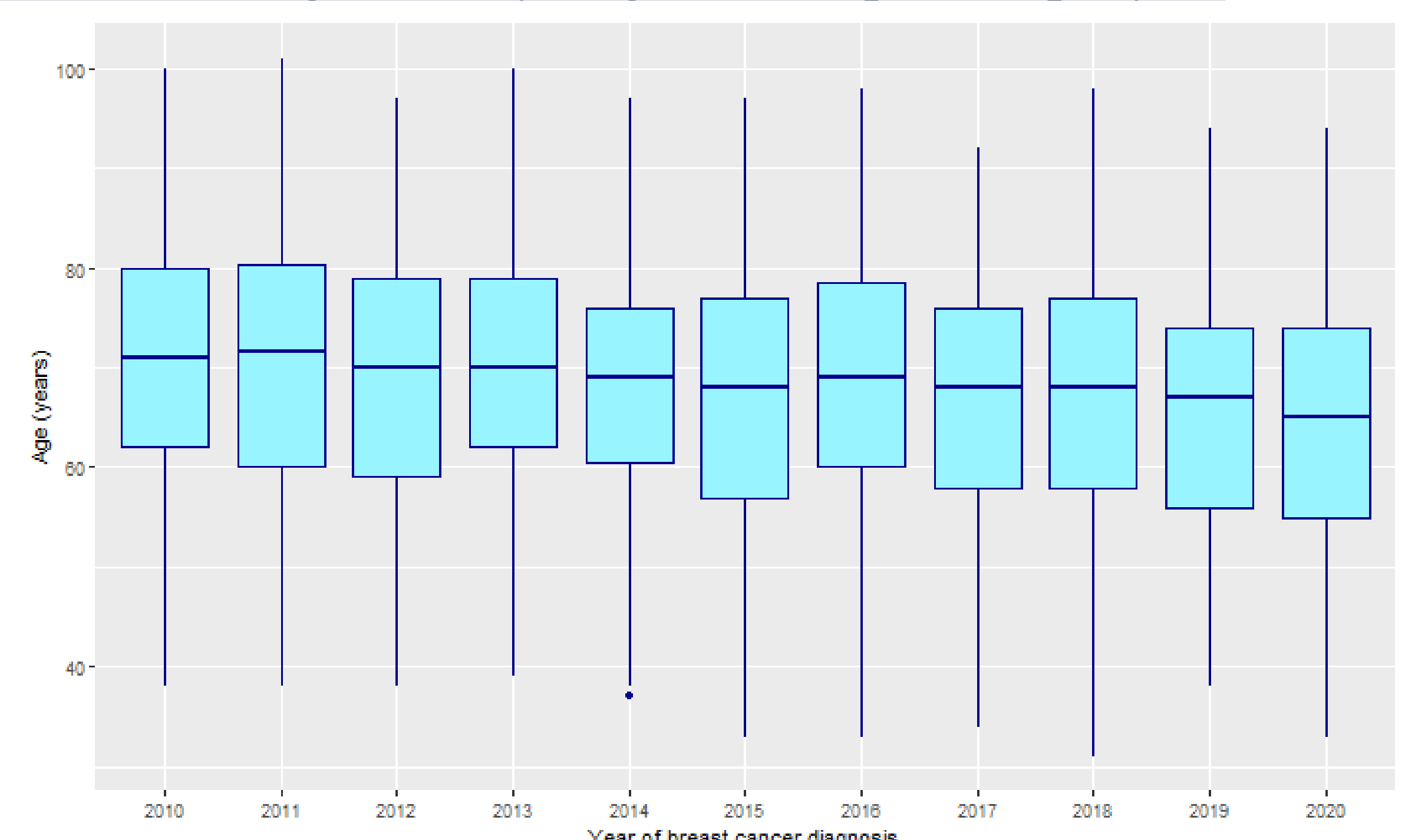


Figure 3. Percentage of patients with the different HR/HER2 subtypes per year

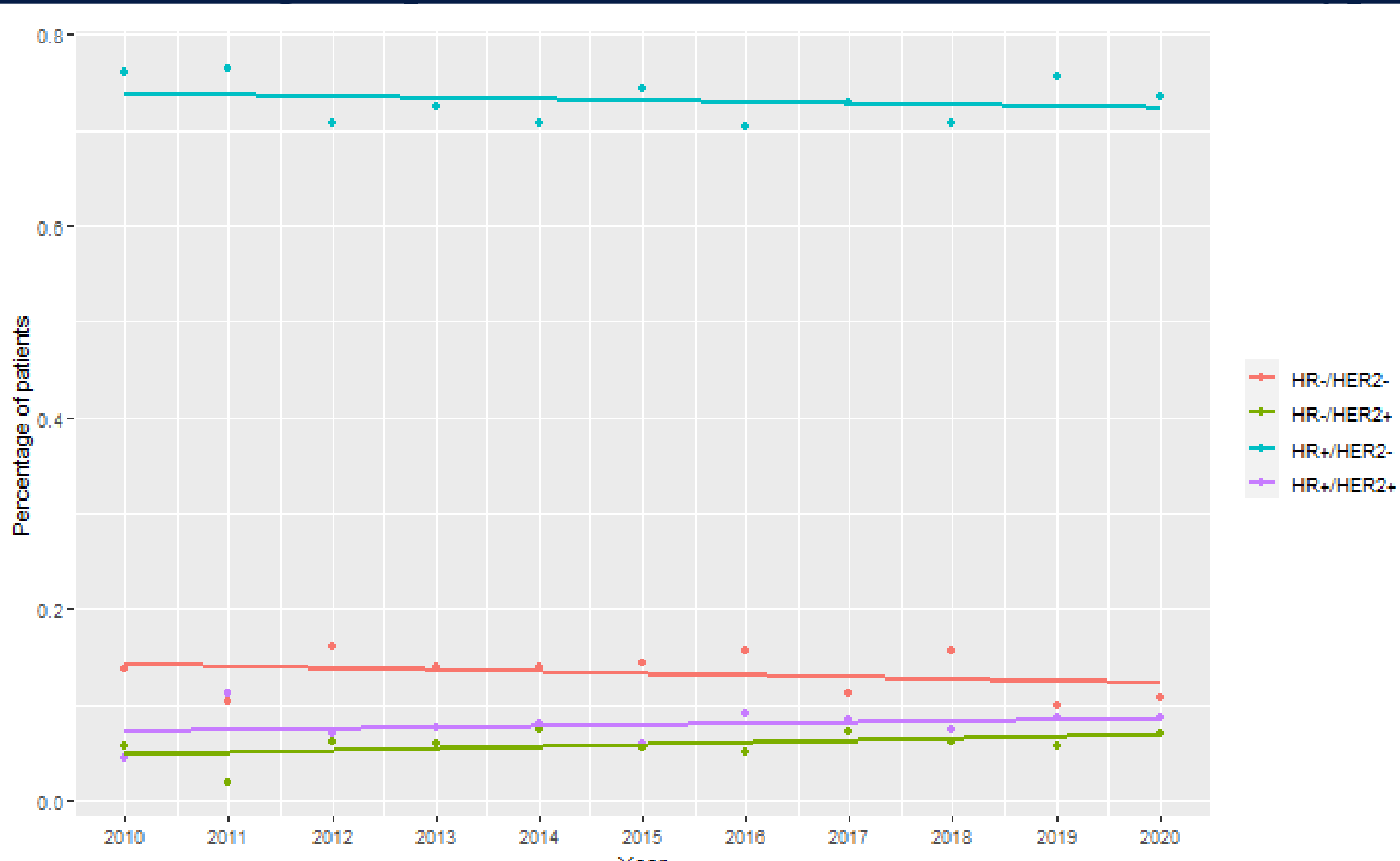


Figure 4. Percentage of HER2+ patients per year

