

COMPARISON OF EPIDEMIOLOGY AND DRUG TREATMENT IN HER2-NEGATIVE METASTATIC BREAST CANCER (MBC) IN EU5

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ABSTRACT

OBJECTIVE: Explore differences/similarities in epidemiology and drug treatment of metastatic breast cancer (mBC) in EU5.

METHODS: All data was derived from the Kantar Health CancerMPact® database, sources for which include country-specific cancer registries, published scientific studies, and proprietary physician surveys comprising of 83 doctors seeing an average of 9,255 patients per month. Age- and gender-specific incidence rates, annual stage-specific progression rates, and annual stage-specific survival rates are used to calculate total number of surviving patients at a specific stage up to 10 years after diagnosis.

RESULTS: Prevalence of breast cancer (BC) ranged between 41-73 per 100K population across EU5. Among BC patients, prevalence of mBC was similar: 8% (UK, Italy) to 10% (Germany, France, Spain). Overall, 62% of mBC patients were diagnosed with HER2-negative disease (56% Germany; 70% France). Among these patients, 35-40% had active disease and were treated with chemotherapy. Patients with triple-negative disease had fewer lines of treatment than did patients without triple-negative disease. Patients who are HER2-negative generally receive between two and three lines of chemotherapy on average. Second-line chemotherapy regimens varied. Capecitabine was the most common therapy (mono and combination) in all countries ranging from 36% (UK) to 40% (Germany). Second and third most common therapies were vinorelbine (23%-26%) and paclitaxel (20%-23%) in Germany, Italy, and Spain vs. docetaxel (18%-34%) and paclitaxel (11%-19%) in UK and France. In third-line, the most commonly used agents were capecitabine (16%-44%) and vinorelbine (18%-26%). Eribulin was used in second-line (3%-6%) and third-line (11%-19%) in all countries except for Spain.

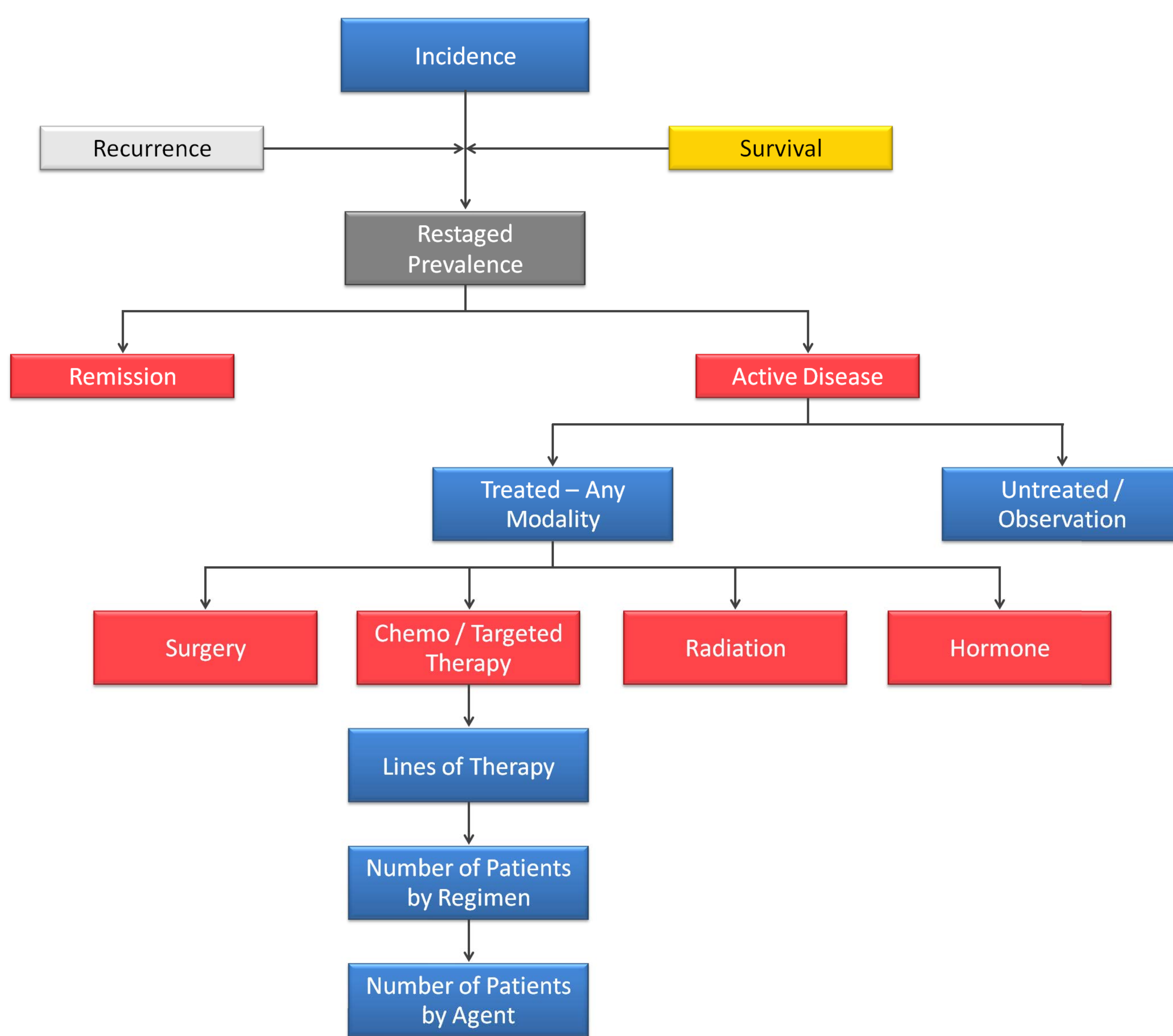
CONCLUSION: Capecitabine is the most utilized chemotherapeutic agent in the second- and third-lines of chemotherapy in Western Europe for HER2-negative patients. A variety of other regimens, primarily monotherapies, may also be used in later lines, including vinorelbine, gemcitabine, eribulin, and docetaxel.

OBJECTIVE

- The objective of this study was to explore differences/similarities in epidemiology and drug treatment of metastatic breast cancer (mBC) in EU5 (France, Germany, Italy, Spain, United Kingdom).

METHODOLOGY

- All data were derived from the Patient Metrics module of the Kantar Health CancerMPact® database. CancerMPact® is a comprehensive oncology decision support resource. It can be utilized for market analysis, strategic planning, and identification of commercial opportunities in the U.S., Western Europe, Japan, and China. This resource is composed of web-based integrated modules including Patient Metrics, Treatment Architecture, and Future Trends and Insights.
- Historical age-, gender-, and stage-specific incidence rates are obtained from country-specific registry sources. These rates of disease are then applied to country-specific population data to calculate age, gender, and stage-specific number of newly diagnosed patients. Projections of the historical incidence rates to future years are done using Bass diffusion curve modeling.
- Stage-specific recurrence/progression rates as well as survival rates are obtained from either these same cancer registries or in-depth literature search and review, depending on the country. The annual stage-specific cumulative rates of recurrence/progression and the annual stage-specific cumulative rates of survival are used to calculate the number of patients at a specific stage of disease among all surviving patients up to 9 years post diagnosis (10-year restaged prevalence).
- Treatment data from the Treatment Architecture module of CancerMPact® is based on physician surveys conducted annually. The current breast cancer survey was fielded in July 2013. This was an internet survey of 83 physicians who treated a total of 9,255 breast cancer patients per month.
- The modality and drug treatment rates from Treatment Architecture are applied to a treatment eligible subset of the above-mentioned restaged prevalence patient group to arrive at the number of patients treated with specific modalities or drug regimens in a given year.
- Sources are noted in the accompanying table in the Reference section.
- The following schematics depict our epidemiology calculation flow:



RESULTS

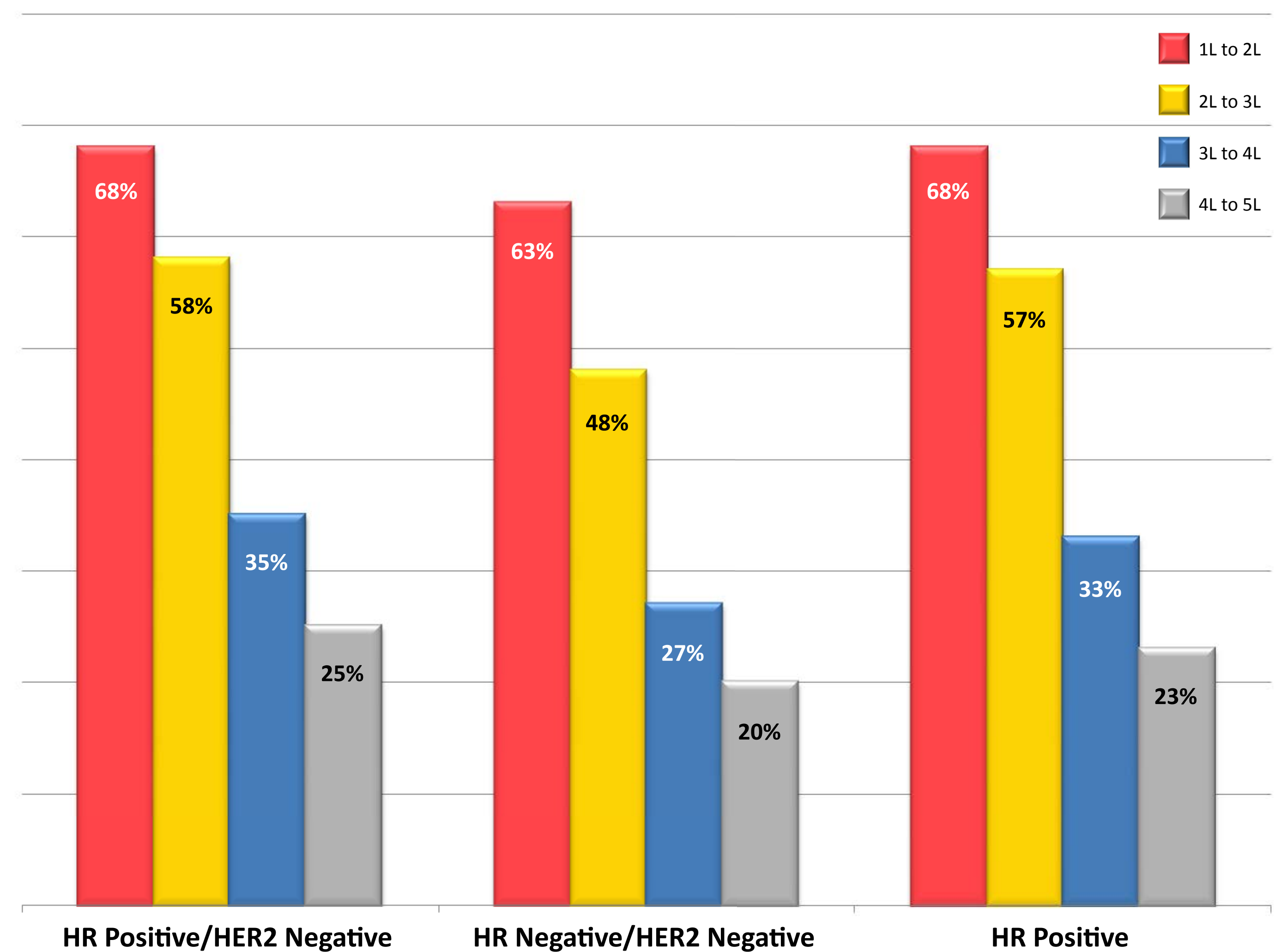
- Prevalence of breast cancer (BC) ranged between 41-73 per 100K population across EU5. Among BC patients, prevalence of mBC was similar: 8% (UK, Italy) to 10% (Germany, France, Spain). Overall, 62% of mBC patients were diagnosed with HER2-negative disease (56% Germany; 70% France). Among these patients, 35%-40% had active disease and were treated with chemotherapy.

Breast Cancer Figures (2014)	UK	Germany	France	Italy	Spain
Population	63,552,800	81,639,000	64,088,000	61,100,000	45,995,461
Patients with BC	347,392	596,945	458,912	410,925	187,683
Patients with mBC	26,550	60,418	46,228	32,700	19,061
HER2-negative Patients with mBC	16,722	33,603	32,128	19,685	12,006
HER2-negative Patients with mBC with Active Disease and Treated with Chemo	6,741	11,763	11,306	7,158	4,177

Breast Cancer Rates (2014)	UK	Germany	France	Italy	Spain
Population	100.0%	100.0%	100.0%	100.0%	100.0%
Patients with BC	0.5%	0.7%	0.7%	0.7%	0.4%
Patients with mBC	0.0%	0.1%	0.1%	0.1%	0.0%
Patients with mBC (Based on Patients with BC)	7.6%	10.1%	10.1%	8.0%	10.2%
HER2-negative Patients with mBC	63.0%	55.6%	69.5%	60.2%	63.0%
HER2-negative Patients with mBC with Active Disease and Treated with Chemo	40.3%	35.0%	35.2%	36.4%	34.8%

- Triple-negative patients appear to receive third and subsequent lines of therapy less frequently than other HR/HER2 groups.

mBC Patients Who Receive Later Lines of Chemotherapy



- Patients with triple-negative disease (ER-/PR-/HER2-) had fewer lines of treatment than did other breast cancer patients. Patients who are HER2-negative generally receive between two and three lines of chemotherapy on average. Second-line chemotherapy regimens varied. Capecitabine was the most common therapy (mono and combination) in all countries ranging from 36% (UK) to 40% (Germany). The second and third most common therapies were vinorelbine (23%-26%) and paclitaxel (20%-23%) in Germany, Italy, and Spain vs. docetaxel (18%-34%) and paclitaxel (11%-19%) in UK and France. In third-line, the most commonly used agents were capecitabine (16%-44%) and vinorelbine (18%-26%). Eribulin was used in second-line (3%-6%) and third-line (11%-19%) in all countries except for Spain. In HER2-negative mBC patients previously treated with anthracyclines and taxanes, the main later line therapies across EU5 are capecitabine (40.7%), vinorelbine (14.8%), eribulin (6.3%), and gemcitabine (11.7%).

Second-line Chemo Drugs (Numbers)	UK	Germany	France	Italy	Spain
Capecitabine	1,274	2,157	2,574	1,426	783
Gemcitabine	176	231	1,052	694	283
Vinorelbine	207	1,425	1,007	783	467
Docetaxel	1,181	578	1,186	578	455
Paclitaxel	394	1,117	1,253	758	467
Eribulin	207	154	403	154	0
Others	580	1,155	1,522	873	183
Total	3,521	5,391	6,714	3,853	1,999

Second-line Chemo Drugs (Rates)	UK	Germany	France	Italy	Spain
Capecitabine	36.2%	40.0%	38.3%	37.0%	39.2%
Gemcitabine	5.0%	4.3%	15.7%	18.0%	14.2%
Vinorelbine	5.9%	26.4%	15.0%	20.3%	23.3%
Docetaxel	33.5%	10.7%	17.7%	15.0%	22.8%
Paclitaxel	11.2%	20.7%	18.7%	19.7%	23.3%
Eribulin	5.9%	2.9%	6.0%	4.0%	0.0%
Others	16.5%	21.4%	22.7%	22.7%	9.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Third-line Chemo Drugs (Numbers)	UK	Germany	France	Italy	Spain
Capecitabine	515	388	1,544	963	374
Gemcitabine	263	569	556	203	224
Vinorelbine	363	486	1,189	485	194
Docetaxel	257	214	293	116	63
Paclitaxel	116	292	757	391	251
Eribulin	294	388	510	413	12
Others	420	673	1,236	615	78
Total	1,681	2,448	4,633	2,172	1,076

Third-line Chemo Drugs (Rates)	UK	Germany	France	Italy	Spain
Capecitabine	30.6%	15.8%	33.3%	44.3%	34.7%
Gemcitabine	15.6%	23.3%	12.0%	9.3%	20.8%
Vinorelbine	21.6%	19.8%	25.7%	22.3%	18.1%
Docetaxel	15.3%	8.8%	6.3%	5.3%	5.8%
Paclitaxel	6.9%	11.9%	16.3%	18.0%	23.3%
Eribulin	17.5%	15.8%	11.0%	19.0%	1.1%
Others	25.0%	27.5%	26.7%	28.3%	7.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

CONCLUSIONS

- Capecitabine is the most utilized chemotherapeutic agent in the second- and third-lines chemotherapy in Western Europe for HER2-negative patients. A variety of other regimens, primarily monotherapies, may also be used in later lines, including vinorelbine, gemcitabine, eribulin, and docetaxel.

REFERENCES

	France	Germany	Italy	Spain	UK
Incidence	Institut de Veille Sanitaire (InVS) ¹	Robert Koch Institute ²	ITACAN ³	Cancer Incidence in Five Continents, IARC ⁴	Cancer Research UK ⁵
Staging	Schleswig-Holstein ⁶ and Rhineland-Palatinate ⁷ Registries (Germany)	Schleswig-Holstein ⁶ and Rhineland-Palatinate ⁷ Registries (Germany)	Modena Cancer Registry ⁸	Schleswig-Holstein ⁶ and Rhineland-Palatinate ⁷ Registries (Germany)	Eastern Cancer Registration and Information Center ⁹
Survival	Eurocare 4 ¹⁰ / Modena ⁸	Eurocare 4 ¹⁰ / Modena ⁸	Eurocare 4 ¹⁰ / Modena ⁸	Eurocare 4 ¹⁰ / Modena ⁸	Eurocare 4 ¹⁰ / Cancer Research UK ⁵
Recurrence	National Oncology Data Alliance ¹¹	National Oncology Data Alliance ¹¹	National Oncology Data Alliance ¹¹	National Oncology Data Alliance ¹¹	National Oncology Data Alliance ¹¹
Treatment	Kantar Health Treatment Architecture ¹²	Kantar Health Treatment Architecture ¹²	Kantar Health Treatment Architecture ¹²	Kantar Health Treatment Architecture ¹²	Kantar Health Treatment Architecture ¹²

