Sub-group analysis was conducted on 69 cases who had full clinical data in order to identify the predictors of Miller pathological response after NAC (see table). Presence of peau d'orange (p = 0.016), >1 breast mass (p = 0.026), T4 stage (p = 0.013), TNM stage 3 (p = 0.052) showed better pathological response. Pre-menopausal females showed a trend toward better pathological response (48%, p = 0.108). Adjuvant tamoxifen and radiotherapy were more common in responder cohort (80.6%, p = 0.094 and 87.1%, p = 0.036 respectively).

Variable	Number (%)		P value
	Path non-responder (Miller 1, 2), n = 38	Path responder (Miller 3−5), n = 31	
Age (median; IQR)	53 (46−60)	49 (46−56)	0.246
ECOG-PS >1	4 (10.5)	4 (12.9)	0.759
Has chronic disease	19 (50)	16 (51.6)	0.894
Married females	30 (78.9)	24 (77.4)	0.878
+ve Family history	5 (13.2)	5 (16.1)	0.727
Pre-menopausal	15 (39.5)	15 (48.4)	0.108
Mastalgia	11 (28.9)	11 (35.5)	0.562
Rt side tumors	22 (57.9)	13 (41.9)	0.187
>1 breast mass	4 (10.5)	10 (32.3)	**0.026**
Peau d'orange	9 (23.7)	16 (51.6)	**0.016**
Nipple retraction	12 (31.6)	10 (32.3)	0.952
Stage 3	29 (76.3)	29 (93.5)	**0.052**
T4 stage	16 (42.1)	21 (67.7)	**0.013**
N+ stage	32 (84.2)	27 (87.1)	0.735
Grade 3	6 (15.8)	5 (16.1)	0.969
ER+ve	26 (68.4)	20 (64.5)	0.732
PR+ve	19 (50)	15 (48.4)	0.894
HER2neu +ve	10 (26.3)	10 (32.3)	0.588
4 cycles NAC	22 (61.1)	24 (77.4)	0.297
Adjuvant tamoxifen	22 (57.9)	25 (80.6)	**0.094**
Adjuvant radiotherapy	28 (73.7)	27 (87.1)	**0.036**

IQR, Inter-quartile range; ECOG-PS; Eastern Cooperative Oncology Group − performance status.

Conclusions: Pre-menopausal females, presence of peau d'orange, T4 stage, TNM stage 3 are likely to show better tumor miller pathological response among advanced breast cancer cases.

No conflict of interest.

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Lipegfilgrastim highly cost-effective in reducing chemotherapy-induced neutropenia in breast cancer patients

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Background: Lipegfilgrastim (Lonquex®) has demonstrated to be non-inferior to pegfilgrastim (Neulasta®) in reducing the incidence of febrile neutropenia (FN) in patients with breast cancer. In secondary endpoints, it demonstrated significant differences in the incidence of severe neutropenia (SN) in cycle 2, depth of ANC nadir in cycle 2 and 3 and time to ANC recovery, suggesting an increased value of lipegfilgrastim compared to pegfilgrastim. The aim of this study was to quantify the cost utility and cost-effectiveness of lipegfilgrastim compared to pegfilgrastim in stage II breast cancer patients. The perspective taken was that of the Belgian payer over a lifetime horizon.

Material and Methods: Two Markov models were developed to track chemotherapy-related complications including FN, SN, chemotherapy delay, reduced dose intensity <85%, infection and death. Utilities and Belgian health states related costs were derived from the literature, the model was validated in a modified Delphi panel afterwards. Trade-off analyses were subsequently conducted with different lipegfigrastim price points tested across age bands and cancer stages.

Results: At equivalent drug cost of €1,169 and at a willingness-to-pay (WTP) threshold of €30,000 per QALY, treatment with lipegfilgrastim dominated pegfilgrastim, with total costs of €6,434 vs €6,444 and total quality-adjusted life years (QALYs) of 16.755 and 16.700, respectively. Lipegfilgrastim was consistently a dominant alternative to pegfilgrastim at WTP thresholds of €10,000 and €50,000 per QALY. The probability for lipegfilgrastim to be cost-effective compared to pegfilgrastim was 69%, 82% and 90%, at a WTP threshold of €10,000, €30,000 and €50,000 per QALY, respectively. When varying lipegfilgrastim price points from €1,000 to €10,000 in deterministic analyses, across age bands, cancer stages and at a WTP of €30,000 per QALY, lipegfilgrastim was cost-effective compared to pegfilgrastim up to a price of €1,500 across all age bands and cancer stages.

Conclusions: Lipegfilgrastim, currently at the pegfilgrastim price level of €1,169, provides greater value than pegfilgrastim because it was cost-saving and more effective. The trade-off analysis for Belgium indicated that lipegfilgrastim was cost-effective compared to pegfilgrastim in all patient age groups and cancer stages up to a price of €1,500.

Conflict of interest: *Corporate-sponsored Research: Deloitte (Berkenlaan 8a, 1831 Diegem, Belgium) in collaboration with KU Leuven (Herestraat 49, 3000 Leuven, Belgium) received an unconditional grant from TEVA Pharmaceuticals Europe B.V. (Swensweg 5, 2031 DA Haarlem, Netherlands) to carry out this study.*

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Clinical factors associated with overall survival (OS) for patients with HER2-positive (HER2+) metastatic breast cancer (MBC) treated with HER2-targeting systemic therapy (HER2Tx)

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Background: The introduction of HER2Tx has significantly improved the objective response rate and overall survival (OS) of pts with HER2+ MBC. Although HER2+ MBC remains incurable, a meaningful minority of pts on first line HER2Tx can have a prolonged phase of disease control. Clinical factors at presentation of MBC that can be associated with OS have not been fully elucidated and are not part of pts assessments at baseline.

Material and Methods: Data from a Departmental database of pts treated with HER2Tx for metastatic or inoperable locally advanced HER2+ BC were reviewed and retrospectively analysed. Only pts with complete data on tumour pathology, first line HER2Tx administered, subsequent lines of therapy and long-term FU were included in the analysis. First and subsequent progression-free intervals and OS were calculated. This abstract focuses on OS data only.

Results: A total of 134 consecutive pts treated between January 2000 and June 2016 were eligible and analysed. Pts characteristics at the time of initiation of HER2Tx for MBC: median age 55 yrs (range 25−83), ER/PR pos 76 (57%)/neg 47 (35%)/unknown 11 (8%), <2 metastatic sites 98 (73%)/>2 sites 36 (27%), visceral disease 85 (63%), HER2Tx+chemotherapy (CTx) 116 (86%). Median follow up is 23 months (range: 0.3–193). The proportion of pts treated for Relapsed (R) HER2+ MBC decreased significantly from the years 2000–2005 (R-MBC 83%) to 2011–2016 (R-MBC 42%), whereas DeNovo (DN) HER2+ MBC has increased significantly (DN-MBC 17% to 58%) in the same time interval. This is most likely an effect of the introduction of HER2Tx for early stage (ES) BC started routinely from 2005. Pts with DN-MBC had a longer median OS (44 months [95% CI: 29−84]) compared to R-MBC (38 months [95% CI: 23−47]). Longer OS was significantly associated with <2 sites of metastatic disease (p = 0.015), absence of visceral metastases (p = 0.048), treatment with HER2Tx+CTx (p = 0.022). On multivariate analysis, DN-MBC (p = 0.048) and <2 metastatic sites at diagnosis (p = 0.001) were associated with significantly longer OS and reduced risk of death. Within our pts cohort a disease complete response (CR) was obtained in 21 pts (16%), 16 of whom never relapsed. All of 16 durable CR pts received HER2Tx+CTx, had <2 sites of metastatic disease and were not previously pre-treated with HER2Tx.

Conclusions: The introduction of HER2Tx for ESBC has significantly altered the presentation of HER2+ MBC in the last decade. Pts who present with DN-MBC, have <2 sites of metastatic disease and no visceral involvement are more likely to achieve a prolonged OS when treated with HER2Tx in combination with CTx. These clinical factors may be used to prognosticate pts outcome and could be incorporated into clinical trials of HER2Tx.

No conflict of interest.

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Roles of CD44 and CD24 in predicting response to neoadjuvant chemotherapy

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Background: Predicting the effect of the Neoadjuvant chemotherapy (NAC) in treating primary breast cancer is important in many aspects. In diagnosing with core needle biopsy, a previous study considered multiple factors using immunohistochemical staining and reported the effect of NAC and its possible prediction in using a machine learning technique with an alternating decision tree (ADTree) in addition to statistical analyses (Horiguchi K et al. J Med Dent Sci 2010; 57; 165–175). In this study, we have further considered for new patients.