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The societal impact of obinutuzumab in the first-line treatment of follicular lymphoma in China

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Summary

In patients with previously untreated follicular lymphoma, obinutuzumab plus chemotherapy (G-chemo) demonstrated improved progression-free survival (PFS) versus rituximab plus chemotherapy (R-chemo)

Using an open cohort dynamic prediction model, these PFS advantages were translated into activity and productivity gains

We estimated that 24,749 progression-free years could be gained by using G-chemo rather than R-chemo, which corresponded with large productivity gains

The prolonged higher productivity, attributed to PFS gains, suggests that incremental treatment costs may be offset by societal gains

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Background

- In the GALLIUM study (NCT01332968), obinutuzumab in combination with chemotherapy (G-chemo) significantly prolonged progression-free survival (PFS) compared with rituximab (R-chemo) in patients with previously untreated follicular lymphoma (FL).[1]
- Improved PFS potentially enables patients to pursue everyday activities, hence providing social and economic gains.[2]
- Our aim was to quantify the aggregate productivity gains for patients with FL in China treated with first-line G-chemo.

PFS advantages were translated into activity and productivity gains

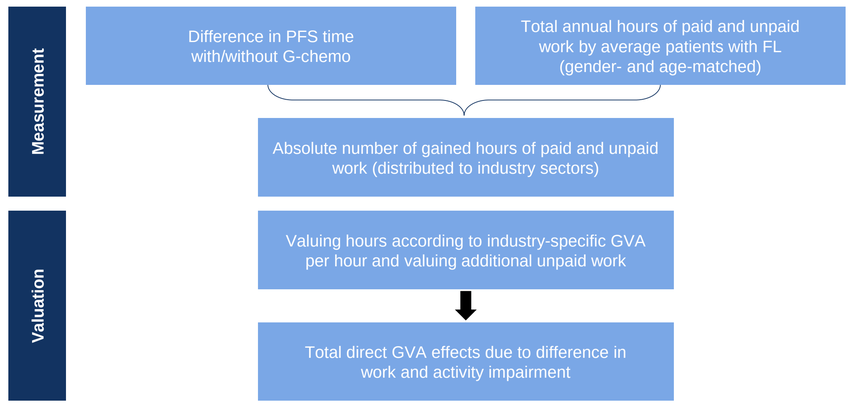
Estimating the incremental impact of G-chemo on time gained in unpaid and paid activities

- Population-based incidence estimates of FL in China were used to inform an open cohort dynamic prediction model for the years 2020–2030.
- Gains in PFS associated with the use of G-chemo were projected to first-line FL patients treated with systemic therapy.[1]
- Calculation of PFS gains for G-chemo versus R-chemo were determined using a Markov model.
- Chinese patient data (age, gender and employment) were taken from both the 2019 Lymphoma Patient Survey (conducted by the Chinese University of Hong Kong, Chinese Lymphoma Home and the Illness Challenge Foundation).
- The 2008 Chinese time-use survey (The China National Bureau of Statistics) was used to evaluate unpaid work activities by age and gender.

Estimating the value of the time gained in unpaid and paid activities

- Overall labor productivity (gross value added [GVA]) was taken from China National Economic and Social Development Statistical Bulletin 2019, return to work data was taken from Mehnert et al. 2011,[3] and informal care costs were taken at market level.

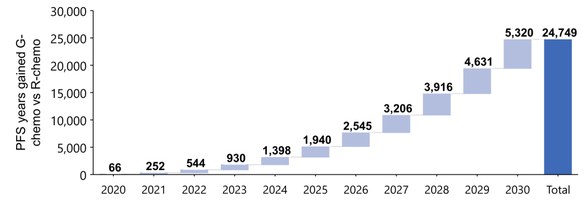
Figure 1. Calculation of socio-economic costs



Substantial gain in PFS years with G-chemo

- It was predicted that approximately 60,000 FL patients would be treated from the years 2020–2030.
- Our model estimated that by utilizing G-chemo rather than R-chemo, 24,749 overall PFS years could be gained.

Figure 2. PFS years gained for G-chemo vs R-chemo



High total productivity gains in paid and unpaid activities

- Using a 3% discount rate, the increase in PFS years corresponded to direct total productivity gains for G-chemo vs R-chemo of approximately 1292 million Chinese Yuan (CNY) in paid (**Figure 3**) and 656 million CNY in unpaid (**Table 1**) activities.
- Owing to higher labor market participation, direct gains were higher for men than for women. Additionally, women are expected to retire earlier according to the different legal retirement age.
- Informal care gains derived by household work and family care were higher for women. While women have a larger share in household work, the difference is particularly pronounced for family care activities. This can be related to the findings that women retire earlier to take care of their grandchildren.

Figure 3. Productivity gains over patient lifetime by baseline age and for overall population for the model time horizon of 10 years

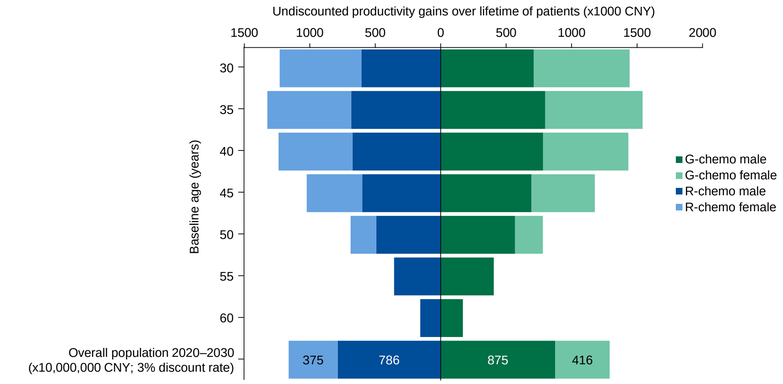


Table 1. Informal care gains for the entire population over the model time horizon of 10 years (3% discount rate)

	G-chemo			R-chemo		
	Male	Female	Total	Male	Female	Total
Informal care gains (x1,000,000 CNY)	2,172.5	4,094.4	6,266.9	1,943.4	3,667.4	5,610.8
Informal care hours (x1,000,000)	43.5	81.9	125.3	38.9	73.3	112.2

	G-chemo vs R-chemo		
	Male	Female	Total
Informal care gains (x1,000,000 CNY)	229.1	427.0	656.1
Informal care hours (x1,000,000)	4.6	8.5	13.1

Conclusions

Our analysis demonstrates the potential economic benefits of G-Chemo for first-line treatment of FL in China.

The prolonged higher productivity, attributed to PFS gains, suggests that incremental treatment costs may be offset by societal gains.

References

1. Marcus R, et al. N Engl J Med 2017;377:1331–44.
2. Hofmann S, et al. Presented at ISPOR 21st Annual European Congress 2018; Poster (PCN133) Available at: https://tools.ispor.org/research_pdfs/60/pdffiles/PCN133.pdf.
3. Mehnert A. Crit Rev Oncol Hematol 2011;77:109–30.

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Disclosures

LS and AL are employees of F. Hoffmann-La Roche Ltd. CB and CT are employees of F. Hoffmann-La Roche Ltd with equity ownership. XR and CL are employees of Shanghai Roche Pharmaceuticals Ltd; CL has equity ownership in F. Hoffmann-La Roche Ltd. JM, JW, HG and DD have no financial or non-financial relationships/activities to disclose.