

AN EVALUATION OF THE ECONOMIC BURDEN AND QUALITY OF LIFE FOR NON-SMALL CELL LUNG CANCER PATIENTS WITH EGFR EXON-20 INSERTIONS IN CHINA

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OBJECTIVE

- Exon-20 insertions (ex20ins) are the third most frequent genetic mutations included in the tyrosine kinase (TK) domain of the epidermal growth factor receptor (EGFR), accounting for 4% to 12% of Non-small Cell Lung Cancer (NSCLC) with EGFR mutations¹.
- EGFR ex20ins NSCLC patients are resistant to currently approved EGFR-TK inhibitors and have worse prognosis².
- This study is aimed at:
 - investigating the patient journey for those who are diagnosed with EGFR ex20ins NSCLC in China;
 - providing a quantitative assessment of the economic burden and Quality of Life (QoL) for EGFR ex20ins NSCLC patients in China.

METHODS

- Data were from a cross-sectional survey of EGFR ex20ins NSCLC patients from 19 cities in China. Both qualitative and quantitative information were collected on patients' demographic and socioeconomic information, diagnosis and treatment history, and direct and indirect costs. EQ-5D-5L instrument was also administered to measure QoL.
- Patients had to meet the following inclusion criteria:
 - They had to have a confirmed EGFR ex20ins NSCLC diagnosis;
 - Their condition progressed after first-line treatments;
 - They had not participated in any clinical trials.
- Patient medical records were used to verify treatments and cost information. A descriptive analysis was performed to the survey data. Both the utility score and VAS score from the EQ-5D-5L were calculated and reported.

TABLE 1: Summary statistics

Variable	Value	Variable	Value
Age (years)	59	EQ-5D-5L score	0.829 (SD: 0.201)
<=49, n (%)	3 (11%)	VAS score	73.71 (SD: 17.11)
50-59, n (%)	11 (39%)	Direct medical costs (out-of-pocket expenditure)	
60-69, n (%)	12 (43%)	pre-diagnosis	CNY 42,529 (USD 6,647)
<=70, n (%)	2 (7%)	1 st -line	CNY 82,052 (USD 12,825)
Gender		2 nd -line	CNY 84,187 (USD 13,158)
Male, n (%)	11 (39%)	3 rd -line	CNY 66,868 (USD 10,451)
Female, n (%)	17 (61%)	Indirect medical costs	
Type of insertion, n (%)		pre-diagnosis	CNY 3,771 (USD 589)
helical region	3 (11%)	1 st -line	CNY 5,354 (USD 837)
loop region	25 (89%)	2 nd -line	CNY 6,309 (USD 986)
Patients w/o difficulties in EQ-5D-5L, n, (%)		3 rd -line	CNY 6,787 (USD 1,060)
Mobility	8 (28.57%)		
Self-care	9 (32.14%)		
Usual activities	10 (35.71%)		
Pain/discomfort	16 (57.14%)		
Anxiety/depression	18 (64.29%)		

Notes: The currency rate was 6.3989 Chinese yuan per United States dollar. Indirect medical costs include nursing expenses and absenteeism of both patient and caregivers. Helical region: 762-766, loop region: near (767-772) and far loop region (773-775).

RESULTS

- Results are demonstrated in Table 1, Figure 1, 2, and 3.

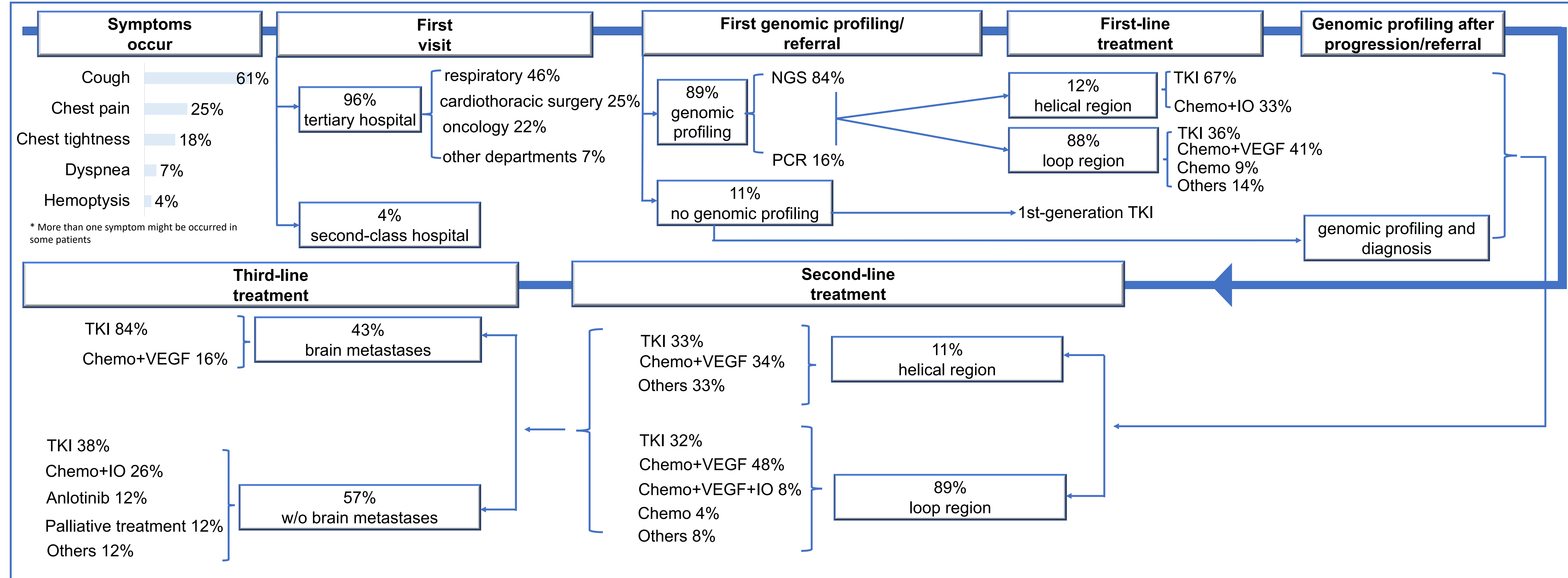


FIGURE 1: Patient journey of diagnosis and treatment for non-small cell lung cancer with EGFR ex20ins in China. Helical region: 762-766, loop region: near loop region (767-772) and far loop region (773-775), NGS: next-generation sequencing, PCR: polymerase chain reaction, TKI: tyrosine kinase inhibitor, VEGF: vascular endothelial growth factor inhibitor, IO: immuno-oncology.

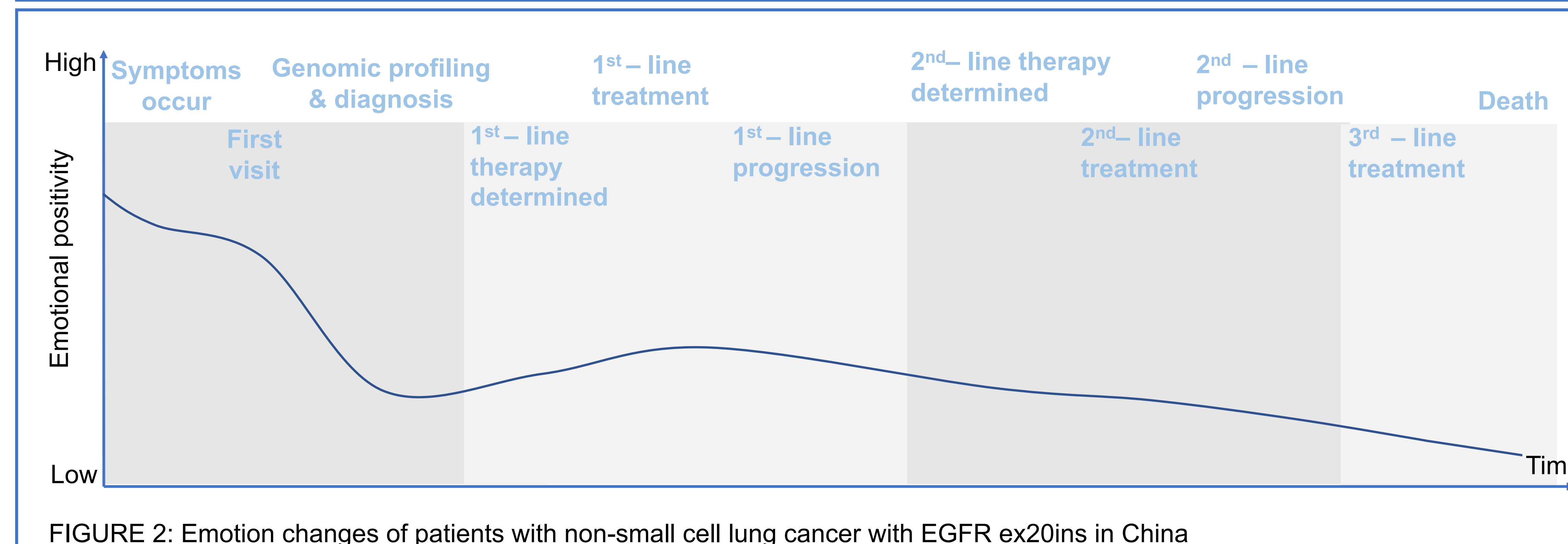


FIGURE 2: Emotion changes of patients with non-small cell lung cancer with EGFR ex20ins in China

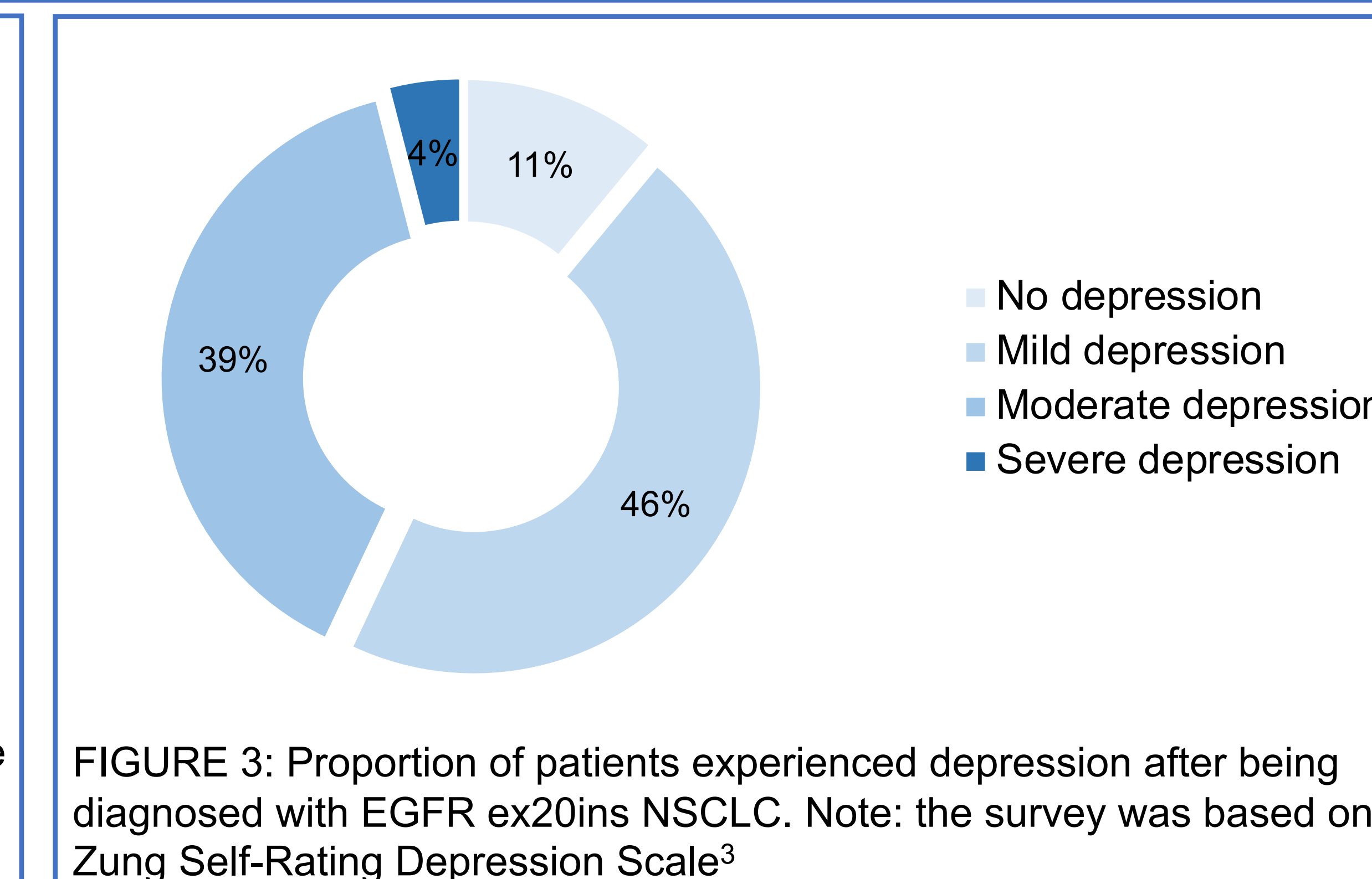


FIGURE 3: Proportion of patients experienced depression after being diagnosed with EGFR ex20ins NSCLC. Note: the survey was based on Zung Self-Rating Depression Scale³

CONCLUSIONS

- The main disease burdens of EGFR ex20ins NSCLC in China are the lack of standard therapy and underdiagnosis.
- EGFR ex20ins NSCLC is a severe disease leading to both psychological stress and reduced QoL.
- EGFR ex20ins NSCLC treatments also create significant financial burden for patients even under the coverage of national health insurance.

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