Differences across Heart Failure Patients' Characteristics, Disease Experience and Quality of Life in Shanghai Compared with Rest of China

PCV125

Cristino J[1], Lee D[1], Sun J[2], Wan J[2], Cotton S[3], Jackson J[3], Studer R[1]

[1]Novartis Pharma AG, Basel, Switzerland; [2]Novartis Pharmaceuticals, Beijing, China; [3]Adelphi Real World, Bollington, UK

BACKGROUND

- In China, there are approximately 4,500,000 individuals with heart failure (HF), equating to a prevalence of 0.9%.[1] HF imposes a substantial economic burden in China, with annual total direct and indirect costs associated with HF estimated at $5.4 billion in 2012.[1,2]
- Chronic HF (CHF) is a progressive disease and leads to physical and functional deterioration resulting in shortness of breath, fatigue, swelling of the ankles or abdomen, and intermittently unpredictable life-threatening crises and increases the risk of hospitalization.[3]
- Although CHF has been recognized as a leading contributor to healthcare burden globally, limited information is available on the burden of CHF in China. Moreover, no information is available exploring potential differences in the burden of CHF on patients being managed in Shanghai, which is the wealthiest city in China compared with patients being managed in other major cities of China (referred collectively as rest of China [RoC]).

OBJECTIVE

- To understand the differences in the burden of CHF among patients from Shanghai compared with those from the RoC.

METHODS

- Adelphi Disease Specific Programmes (DSPs) are large, multinational surveys conducted in clinical practice that describe patient characteristics, current disease management, disease-burden impact, and associated treatment effects.[4]
- Data were analyzed from CHF DSP conducted in a real-world setting in China in 2016.
- Patient record forms (PRFs) were completed by cardiologists for patients presenting with CHF. Patient self-completion (PSC) questionnaires were voluntarily completed by patients whose information was recorded in the PRFs. Caregiver self-completion (CSC) questionnaires were voluntarily completed by the informal caregivers of these patients.
- Data were compared between Shanghai versus RoC which included Beijing, Guangdong, Zhejiang, Chongqing, Hubei, Tianjin, Liaoning, and Sichuan.
- P values less than 0.05 were considered statistically significant.

RESULTS

- Data were analyzed from 1500 PRFs (Shanghai, n=300; RoC, n=1200), 933 PSCs (Shanghai, n=179; RoC, n=754) and 458 CSCs (Shanghai, n=90; RoC, n=368).

Patient demographics

- Mean age and proportion of male patients were similar between the two groups. Proportion of retired patients was statistically significantly higher in Shanghai (**Table 1**).
- Patients in Shanghai had a lower mean body mass index versus RoC (**Table 1**).
- Compared with RoC, fewer patients in Shanghai were smokers (never smoked, 69% vs 56%), and consumed alcohol (never drunk alcohol, 85% vs 72%; **Table 1**).
- The PRF data indicated that HF was diagnosed more recently in patients in Shanghai than in RoC (median, 183 vs 365 days; **Table 1**).

Table 1. Patient demographics (PSC data)

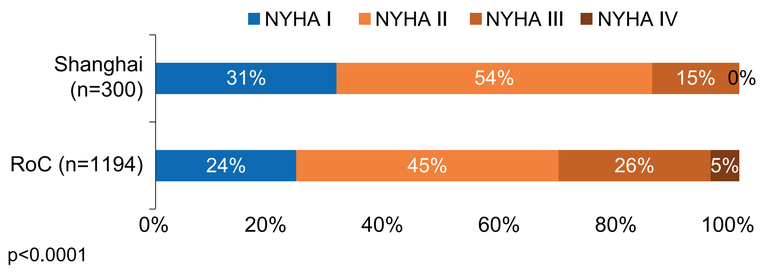
Characteristics	Shanghai	RoC	P value
	n=179	n=754	
Age (years), mean (SD)	64.9 (11.2)	66.0 (10.0) [n=751]	0.2124
Male	53%	56% [n=753]	0.5597
BMI (kg/m²), mean (SD)	23.5 (2.7) [n=178]	24.2 (3.1) [n=749]	0.0135
Smoking status	n=179	n=725	
Never smoked	69%	56%	<0.0001
Ex-smoker	30%	32%	
Current smoker	1%	12%	
Alcohol consumption	n=165	n=582	
Has never drunk alcohol	85%	72%	0.0003
Used to drink alcohol	13%	17%	
Drinks alcohol	2%	11%	
Employment status	n=178	n=746	
Retired	89%	79%	0.0007
Working full-time	10%	8%	
Homemaker	1%	7%	
Unemployed	0%	3%	
Other	1%	3%	
Days since HF diagnosis, mean (SD)*	n=179	n=740	<0.0001
Mean (SD)	315 (483)	641 (841)	
Median (IQR)	183 (91–365)	365 (122–730)	

* PRF data set. BMI, body mass index; HF, heart failure; IQR, inter quartile range; SD, standard deviation.

Clinical characteristics

- A higher proportion of patients in Shanghai were categorized as New York Heart Association functional class I-II than RoC (85% vs 69%; **Figure 1**).
- The mean left ventricular ejection fraction was also higher in patients from Shanghai compared with RoC (52.4% [n=300] vs 48.7% [n=998]; p<0.0001).
- The comorbid conditions such as anxiety, obesity and sleep apnea were significantly more prevalent in patients in RoC compared to those in Shanghai (**Figure 2**).

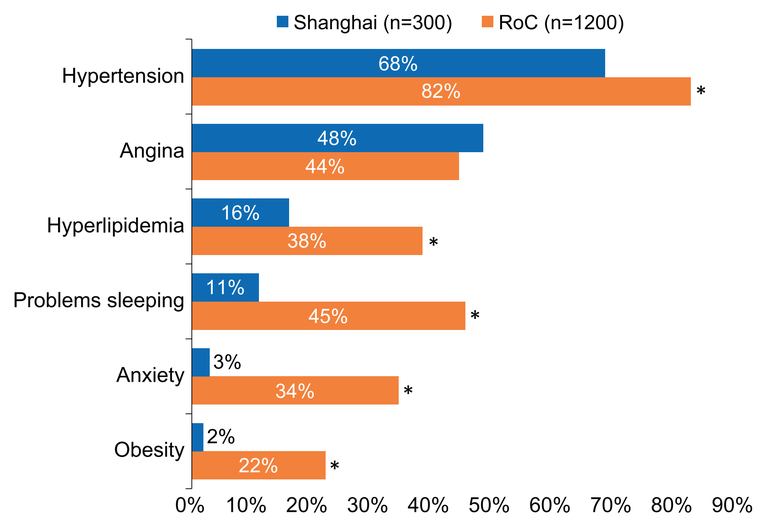
Figure 1. Proportion of patients by NYHA class (PRF data)



p<0.0001

NYHA, New York Heart Association; RoC, rest of China.

Figure 2. Patient comorbidities profile

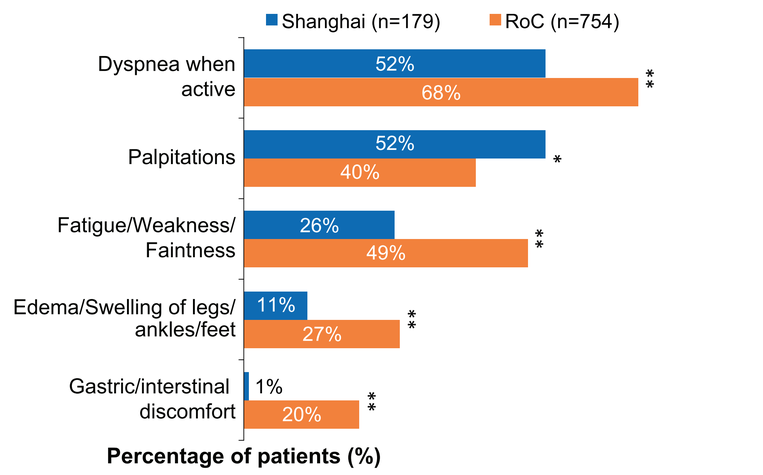


*p<0.0001; RoC, rest of China.

Symptoms of CHF

- A statistically significantly lower proportion of patients in Shanghai reported dyspnea when active, fatigue, edema and gastric discomfort as the most troublesome symptoms versus RoC (**Figure 3**).
- The proportion of patients reporting palpitations were statistically significantly higher in Shanghai than RoC (52% vs 40%; **Figure 3**).

Figure 3. Patient reported top 5 most troublesome CHF symptoms

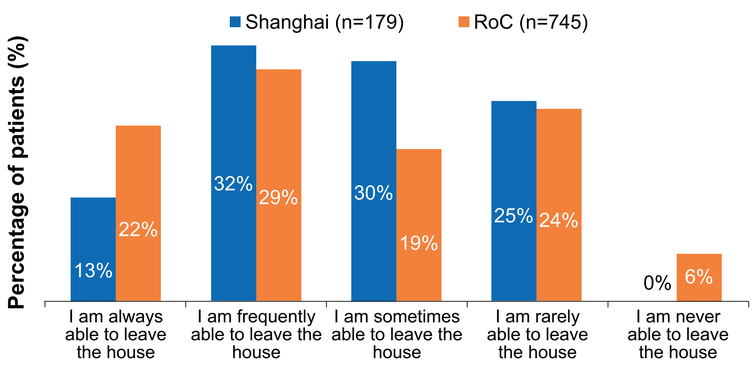


*p=0.0039; **p≤0.0001; RoC, Rest of China.

Disruption to patient's daily life due to CHF

- The mean (SD) score for disruption to patients' everyday life was 4.3 (2.7) in Shanghai (n=179) and 4.6 (2.1) in RoC [n=738] (scale 1 [no disruption] to 10 [severe disruption]).
- Owing to the impact of CHF on daily life, ≥25% of patients were rarely or never able to leave the house in both Shanghai and RoC (**Figure 4**).
- The work impairment due to CHF was statistically significantly greater in patients in Shanghai (n=14) compared with RoC [n=48] (45.7% vs 24.6%; p=0.0008).

Figure 4. Ability of patients to leave the house due to CHF

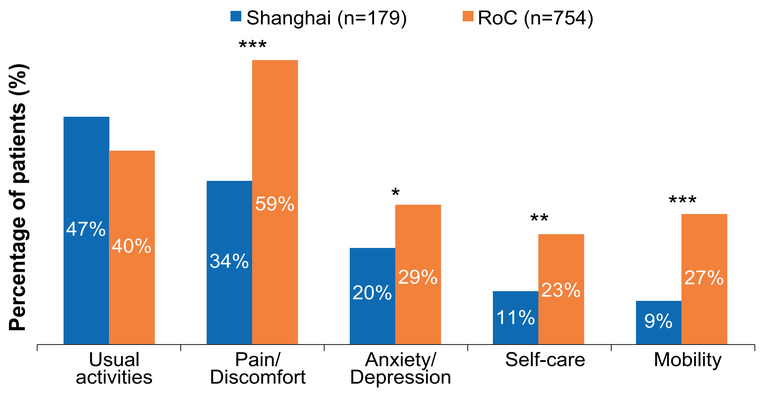


CHF, chronic heart failure; RoC, rest of China.

Impact of CHF on quality of life

- Patients in Shanghai reported significantly higher mean EQ-5D utility score than patients in RoC (0.86 [n=178] vs 0.75 [n=753]; p<0.0001).
- EQ-5D results indicated that patients who experienced moderate-to-extreme pain or discomfort, moderate-to-extreme anxiety or depression, and moderate-to-extreme problems in self-care and mobility were significantly lower in Shanghai compared with RoC (**Figure 5**).

Figure 5. Percentage of patients with moderate-to-extreme impact on the EQ-5D domains

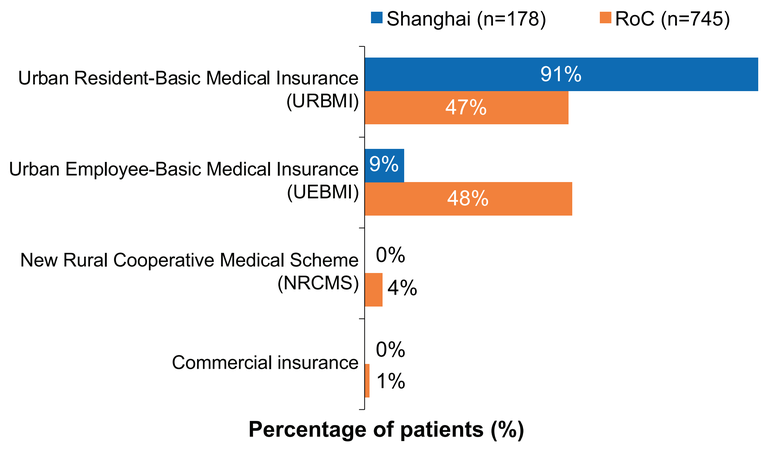


*p=0.0098; **p=0.0001; ***p<0.0001. Note: the response for self-care variable was missing for one patient each in both groups.
EQ-5D, 5-dimension EuroQol questionnaire; RoC, rest of China.

Financial impact

- Compared with RoC, a significantly higher proportion of patients in Shanghai had an Urban resident-basic medical insurance plan (91% vs 47%; **Figure 6**).
- Patients in Shanghai reported significantly lower mean cost of transport (¥14.6 [n=154] vs 26.7 [n=635], p=0.0009) and food cost (¥1.6 [n=87] vs 27.3 [n=318], p<0.0001) per hospital visit as compared to patients in RoC.
- Compared with RoC (n=591), a significantly higher proportion of patients in Shanghai (n=172) paid a fixed percentage of cost of HF drugs (62% vs 23%, p<0.0001), whereas those who paid a fixed amount of the cost of HF drugs were significantly lower (39% vs 54%, p=0.0004).

Figure 6. Health insurance plan



RoC, rest of China.

Caregiving assistance required

- Patients in Shanghai (n=179) compared with RoC (n=751) had a significantly lower proportion of informal (78.2% vs 92.4%, p<0.0001) and paid professional caregivers (4.5% vs 10.0%, p=0.0191).
- Based on CSC data set, caregivers in Shanghai had assisted patients for a significantly fewer number of years than those in RoC (mean, 0.9 [n=90] vs 2.0 [n=351], p=0.0004), but for more hours per week (average, 28.7 [n=88] vs 23.1 [n=262], p=0.0062).

Limitations

- The inevitable limitations associated with data collected from surveys are relevant for the current study, including recall bias, missing data, and over-reporting of surveyed events.
- The selection of patients favors inclusion of patients who present at a cardiologist consultation more frequently; therefore, it is possible that patients with more severe disease or complications may be overrepresented in the sample. However, these limitations seem not to impact the overall the conclusions of this study.

CONCLUSIONS

- This study shows that CHF impacts HRQoL and presents substantial disruption in patients' everyday life in China.
- Patients in Shanghai appeared to be different from RoC in lifestyle, severity and symptoms of disease, impact on HRQoL and financial burden.
- Further research is required to inform the reasons behind these differences and the potential implications in the long-term outcomes of the CHF patients.

References

1. Gu D, et al. Chin J Cardiol 2003; 31: 3−6
2. Cook C, et al. Int J Cardiol 2014; 171: 368−376
3. Jeon YH et al. BMC Health Serv Res 2010; 10:77
4. Anderson P, et al. Curr Med Res Opin 2008; 24: 3063−3072

Disclosures

J. Cristino, D. Lee, J. Sun, J. Wan and R. Studer are employees of Novartis. S. Cotton and J. Jackson are employees of Adelphi Real World and were contracted by Novartis to conduct this study.

Acknowledgments

The authors acknowledge Madhavi Kanithi (Novartis, Hyderabad) for designing the poster layout. The final responsibility for the content lies with the authors.

Funding

This study was sponsored by Novartis Pharma AG, Basel, Switzerland.

Poster presented at the International Society for Pharmacoeconomics and Outcomes Research (ISPOR), Annual European Congress, November 2-6, 2019, Copenhagen, Denmark.