Societal Value of Intravitreal Injections for Retinal Vascular Diseases in the National Reimbursement Drug List in China

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Background

- Diabetic Macular Edema (DME), neovascular Age-related Macular Degeneration (nAMD), and Retinal Vein Occlusion (RVO) are leading retinal vascular diseases and major causes of blindness, imposing a heavy global and Chinese disease burden
- Intravitreal injections, including anti-VEGF drugs and anti-VEGF/Ang-2 bispecific therapies have been proved highly effective in treating these diseases, generating great societal benefits
- However, calculation of these drugs' societal value remains unexplored

Methods

Samples

- The societal value of 4 therapies for the diseases from 2024 to 2033 was estimated, which are currently included in the National Reimbursement Drug List (NRDL), namely *faricimab, aflibercept, ranibizumab*, and *conbercept*

Methodology

- Derived from WifOR's annual social impact framework **(Fig.1)**
- Incremental quality-of-lives (QALYs) were obtained from pharmacoeconomic literatures and were mapped to paid and unpaid work, monetized using labor force participation rate, gross value added per economically active person, productivity and time ratio adjustment indicators **(Fig.2)**
- Paid work effects were extended to indirect and induced value-chain effects through Leontief multipliers

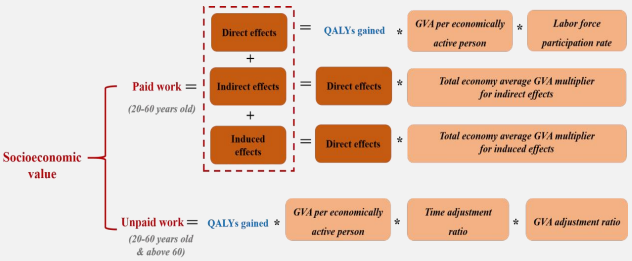

Figure 1. WifOR's social impact framework

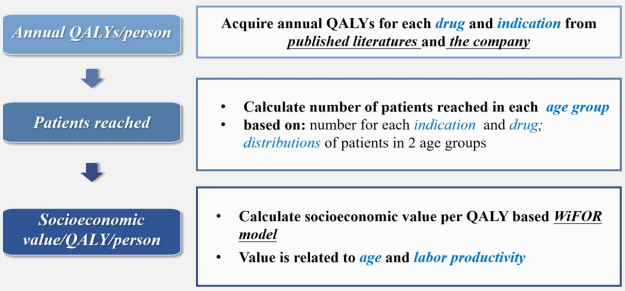

Figure 2. Analysis process

Results

- 4 therapies in NRDL of our study are predicted to cover a total of 15,339,795 patients from 2024 to 2033, generating about 308,229.47 QALYs with a total societal value of $14.81 billion **(Tab.1)**

Drugs	Indications	Patients reached	Total QALYs gained	Socioeconomic value from 2024 to 2033($, billion)	Total socioeconomic value($, billion)
Faricimab	DME	2,040,348	66,433.7	3.855	5.400
	nAMD	2,061,252	29,657.3	0.647	
	CRVO	151,388	3,336.6	0.134	
	BRVO	713,287	18,431.3	0.765	
Aflibercept	DME	831,470	26,440.7	1.936	2.161
	nAMD	768,412	7,223.0	0.225	
Obinutuzumab	DME	1,440,684	19,665.3	1.440	2.950
	nAMD	1,331,422	18,000.8	0.533	
	CRVO	130,876	2,884.5	0.145	
	BRVO	623,146	16,102.1	0.832	
Conbercept	DME	2,152,272	46,273.8	2.594	4.298
	nAMD	1,977,126	25,623.6	0.588	
	CRVO	193,559	4,266.0	0.166	
	BRVO	924,553	23,890.4	0.951	

Table 1. Socioeconomic value of 4 therapies in NRDL of retinal vascular diseases

- *Conbercept* is estimated to reach the most patients (5,247,510, 34.21%), and *faricimab* is estimated to create the most QALYs (117,859.00, 38.24%), generating the highest societal value ($6.84 billion, 35.93%) **(Fig.3)**
- Selected therapies cover the treatment of DME, nAMD, CRVO, and BRVO. The highest societal value is estimated to be generated in DME indication, with a value of $9.82 billion **(Fig.4)**

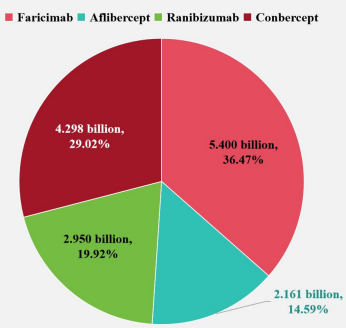

Figure 3. Total QALYs of 4 therapies

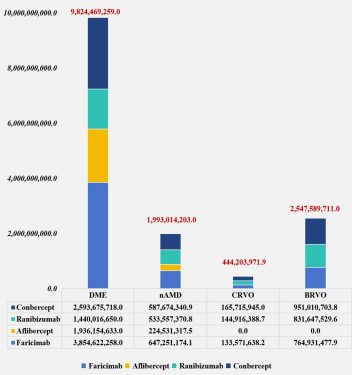

Figure 4. Socioeconomic value in each indication

Conclusion

- Intravitreal injections demonstrate great societal value and significant improvement in quality of life for patients with retinal vascular diseases
- Our findings further provide a new perspective for the NRDL to assess innovative drugs' value, underscoring the importance of multiple dimensions in the assessment of the value of innovative medication

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