Ledipasvir-sofosbuvir for treating chronic hepatitis C

Produced by School of Health and Related Research (ScHARR), The University of Sheffield

Correspondence to Praveen Thokala, Research Fellow, ScHARR, University of Sheffield, Regent Court, 30 Regent Street, Sheffield, S1 4DA

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Description of additional analyses undertaken by the ERG

Gilead's response to the NICE questions included new cost-effectiveness analyses results. Additional analyses were undertaken by the ERG to verify the company's results.

The details of the analyses undertaken are as below:

- 12 weeks LDV/SOF for GT1 and GT4 treatment experienced patients with cirrhosis

The analysis was run for the following scenarios

- ERG base case

As noted in the ERG report, all analyses were undertaken using point estimates of parameters due to the excessive computation time and complexity associated with running the probabilistic version of the model. As before, total costs and QALYs for LDV/SOF and each comparator are reported to two decimal places, which may produce some rounding error in the calculation of ICERs.

SVR rates

The SVR rates used for LDV/SOF and LDV/SOF+RBV are presented in Table 1.

Table 1: SVR rates used in the new analyses

Treatment	**SVR (%)**	**Source**	**Details**
HCV genotype 1/4, treatment-experienced cirrhotic patients			
LDV/SOF 12 weeks	95.6%	ION-2	The company states that in the 12 week LDV/SOF arm, 95.6% (197/206) of low risk cirrhotic patients (defined as patients with platelets ≥75,000 $mm^{3)}$ achieved SVR12

SVR – sustained virologic response, TN - treatment-naïve, TE – treatment-experienced, CC –compensated cirrhosis

Results

The cost-effectiveness analyses results estimated from the company's model are presented in Table 2. It should be noted that the SVR rates for LDV/SOF and LDV/SOF+RBV are from Table 1, whilst the SVR rates for the comparators are the same as those considered in the company's base case analysis.

Table 2: Central estimates of cost-effectiveness results estimated by ERG

(i) Genotype 1/4 treatment-experienced cirrhotic patients					
Option	QALYs	Costs	Inc. QALYs	Inc. costs	ICER
LDV/SOF 12 weeks	9.61	£60,377.86	4.42	£19727.06	**£4,463**
SOF+PEG-IFN2a+RBV	8.59	£63,193.43	-	-	dominated
SMV+PEG-IFN2a+RBV	8.31	£62,045.65	-	-	dominated
TVR+PEG-IFN2a+RBV*	7.46	£63,324.53	-	-	dominated
BOC+PEG-IFN2b+RBV*	6.95	£68,413.45	-	-	dominated
PEG-IFN2a+RBV	5.74	£47,441.22	-	-	ext dom
No treatment	5.19	£40,650.80	-	-	-

**not applicable for genotype 4 patients*

Inc. – incremental; ICER – incremental cost-effectiveness ratio; ext dom – extended dominance; IFN – interferon

Table 3 presents the central estimates of cost-effectiveness results of the additional analysis; which uses the ERG-preferred base case analysis in combination with transition probabilities taken from the previous sofosbuvir STA model.

Table 3: Central estimates of cost-effectiveness (additional analysis 1, use of alternative transition probabilities based on the sofosbuvir STA model) estimated by ERG

(i) Genotype 1/4 treatment-experienced cirrhotic patients					
Option	QALYs	Costs	Inc. QALYs	Inc. costs	ICER
LDV/SOF 12 weeks	9.74	£61,650.28	2.36	£10,853.25	**£4,598**
SOF+PEG-IFN2a+RBV	9.19	£66,473.04	-	-	dominated
SMV+PEG-IFN2a+RBV	9.03	£65,803.66	-	-	dominated
TVR+PEG-IFN2a+RBV*	8.59	£68,854.52	-	-	dominated
BOC+PEG-IFN2b+RBV*	8.33	£74,964.16	-	-	dominated
PEG-IFN2a+RBV	7.68	£56,386.16	-	-	ext dom
No treatment	7.38	£50,797.03	-	-	-

**not applicable for genotype 4 patients*
Inc. – incremental; ICER – incremental cost-effectiveness ratio; ext dom – extended dominance; IFN – interferon

ERG critique

The ERG urges caution in interpreting cost-effectiveness analyses results presented in Tables 2 and 3, as they are estimated assuming all the patients receive 12 weeks of LDV/SOF. While the EMA suggests that "12 weeks may be considered for patients deemed at low risk for clinical disease progression and who have subsequent retreatment options", clinical advice received by the ERG during the writing of the report suggests that there is no clear definition that can be used to identify this subgroup of patients. The definition used by the company to define the low risk group (patients with platelets ≥75,000 mm^3) needs to be verified by the clinical experts on the NICE appraisal committee.