INTRODUCTION
Prior to 2011 the combination of pegylated interferon and ribavirin was approved for the treatment for chronic hepatitis C. For patients with HCV genotype 1, the current standard of care is triple therapy with boceprevir or telaprevir in addition to pegylated interferon plus ribavirin. Of the chronic HCV genotype 1 infected population, approximately 55% are estimated to be non-responders to PR treatment [1]. Boceprevir-based triple therapy is indicated for use in adult chronic HCV genotype 1 patients with compensated liver disease, including cirrhosis, who have failed previous therapy with interferon and ribavirin [2, 3].

OBJECTIVES
To estimate health care costs of three alternative therapeutic strategies for Russian treatment-experienced chronic HCV patients, who had failed previous treatment, in short- and long-term time horizon: 1) no treatment; 2) peginterferon and ribavirin (PR); 3) protease inhibitor (PI) boceprevir added to PR.

METHODS
An Excel-based model was developed earlier to evaluate costs and outcomes of chronic HCV-therapy treatment-experienced population non-treated or treated with dual therapy with PR and triple therapy with boceprevir in combination with PR. At baseline, chronic hepatitis C patients with genotype 1 initiate dual or triple antiviral drug therapy or no treatment:
- no treatment;
- dual therapy – PR for 48 weeks;
- triple therapy – PR for only 4 weeks followed by Boceprevir + PR triple therapy for an additional 44 – 48 weeks in total.
Costs for two time periods were analysed: antiviral therapy phase costs (0-48 weeks) and disease-progression related costs (from 48 weeks to 25 years), depending on the chosen therapy. Costs used within the model consist of:
- Antiviral therapy phase
  - Drug costs
  - Monitoring treatment cost
  - Disease progression phase
  - Liver disease events related costs
Antiviral drug costs were calculated on the base of registered prices from the list of vital and essential drugs. Incidence of compensated and decompensated cirrhosis, hepatocellular carcinoma, liver transplant and post-liver transplant in the outcome of chronic HCV in long-term period was derived from available published data. Treatment costs of liver disease progression events were estimated according to the tariffs of the Russian healthcare system in 2014.

RESULTS
Boceprevir + PR compared to no treatment strategy and PR therapy was associated with more avoided liver-disease progression events at lesser disease progression associated costs, but higher total costs, resulting in boceprevir+PR as the more effective and costly treatment option in patients with chronic HCV genotype 1 non-responders to previous treatment in Russia.
Drug costs per patient are provided in table 1.

The costs of dual and triple regimens of antiviral therapy per patient amounted to 10,864.74 and 26,065.31 €.

The severe liver disease progression events of chronic hepatitis C, depending on the outcome of the antiviral therapy are presented in table 2. Summary of economic costs associated with chosen treatment strategy, according to the expected number of patients with disease progression after previous antiviral therapy, are shown in figure 1.

CONCLUSION
Antiviral therapy with boceprevir plus PR in comparison with only PR therapy and no treatment strategy is cost-effective due to reduced frequency of disease progression events and associated costs.

REFERENCES