

## Introduction

- Recently, the epidemic of obesity has become one of the major global health problems. Between 1975 and 2016 the prevalence of obesity worldwide has tripled due to a combination of high-calorie food intake, and a sedentary lifestyle.
- In the Russian Federation, according to the data of the state statistical observations, 1,909,700 patients with obesity were registered in 2020.
- Obesity is not only a medical, but also an economic problem. Direct medical costs associated with the treatment of its complications determine a significant socio-economic burden of the disease.
- All of the above determines the need to develop effective and safe treatment strategies for the treatment of obesity.

## Aim

- Assessment of orlistat, liraglutide and sibutramine consumption in the Russian Federation as a therapy recommended by the Russian Clinical Guidelines for the pharmacotherapy of obesity.

## Materials and methods

- IQVIA database was selected for information on the sales of the considered drugs in the retail, at the expense of the federal and regional budgets in the period 2011-2021 in the Russian Federation. The consumed volumes of each drug were recalculated into the number of Defined Daily Doses (DDD) for each international nonproprietary name in accordance with the WHO methodology.

## Results

- The results of the analysis of the consumption of Sibutramine (including in combination with Methylcellulose), Liraglutide and Orlistat in the Russian Federation in the period 2011-2021 are presented in Fig. 1 and Fig. 2.

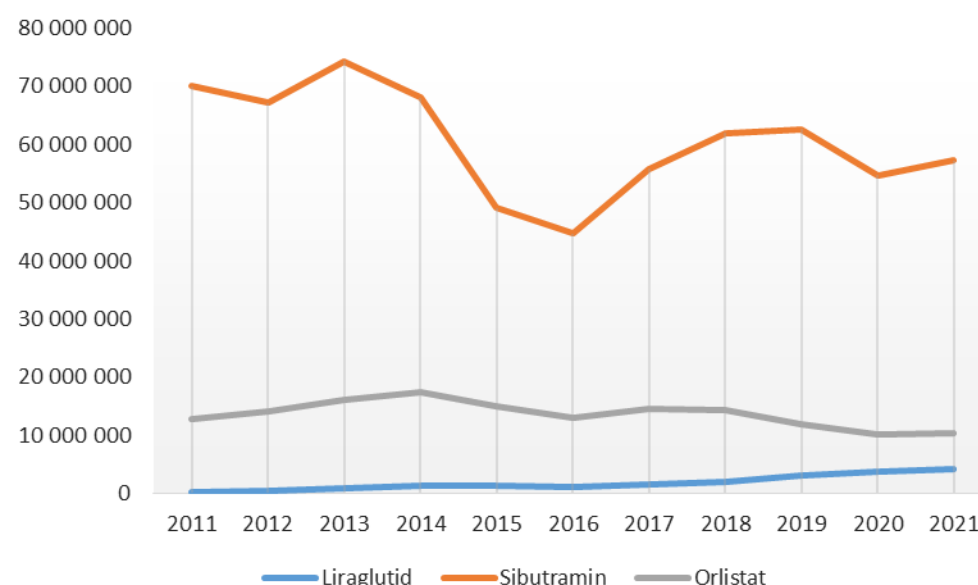


Fig. 1. Data on the consumption of Sibutramine, Liraglutide and Orlistat in the Russian Federation in the period 2011-2021.

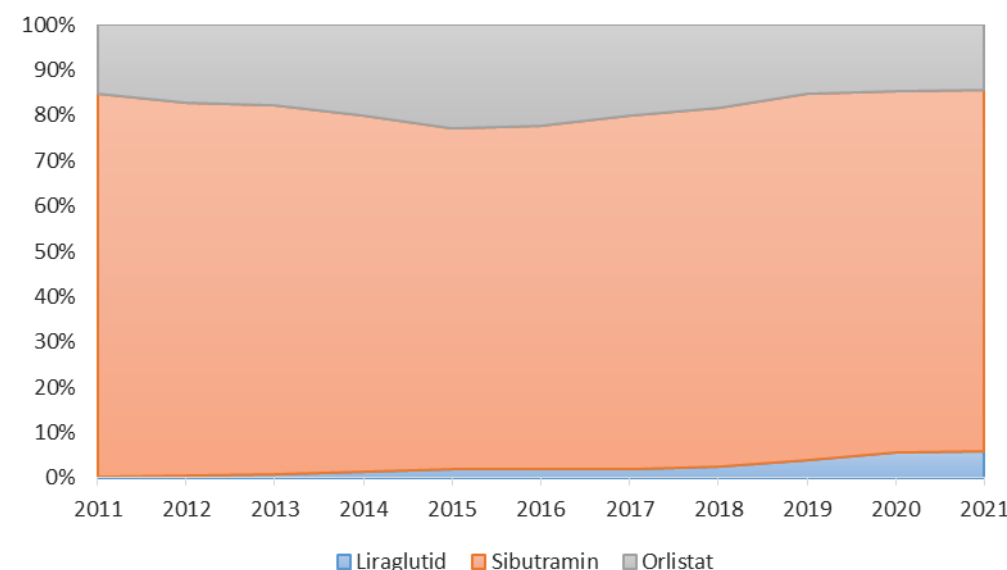


Fig. 2. Annual distribution (in %) of purchases of each drug.

The analysis showed that over a 10-year period there is a tendency to reduce the consumption of drugs for the treatment of obesity from 83.03 million DDDs in 2011 to 71.7 million DDDs in 2021 (fig. 1). At the same time, sibutramine consumption dominated throughout the observation period: its share among drugs for the treatment of obesity ranged from 76% to 84%. There is some positive trend in Liraglutide consumption (from 1% in 2011 to 6% in 2021). Orlistat consumption ranged from 14% to 24%, with peak consumption during 2015-2016. (Fig. 2).

The ratio of the number of patients registered in the Russian Federation with a diagnosis of obesity and the total number of annual courses (DDD per year / 365) of Sibutramine, Orlistat and Liraglutide is shown in Fig. 3.

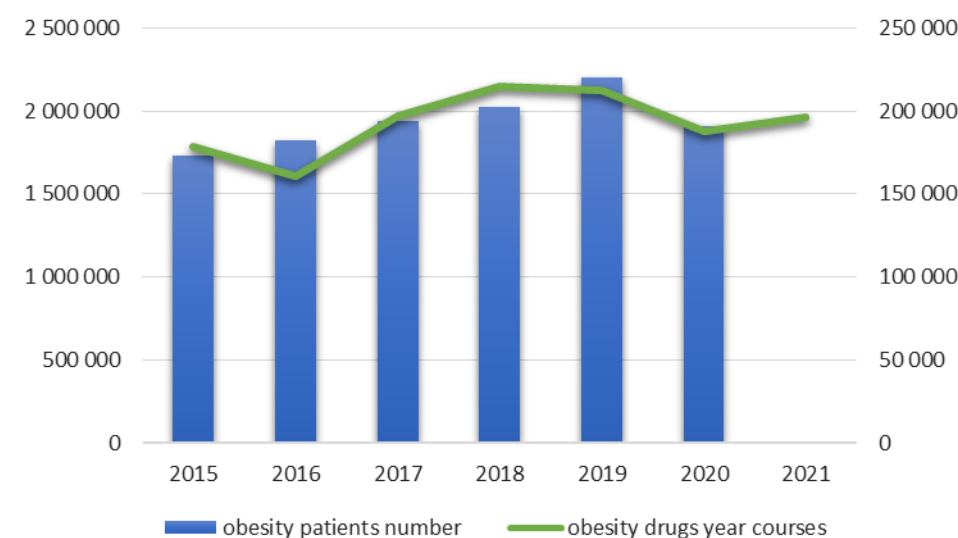


Fig. 3. The ratio of the number of patients registered in the Russian Federation with a diagnosis of obesity and the total number of annual courses of Sibutramine, Orlistat and Liraglutide.

In accordance with the available data from the state statistical observation for the period, 2015-2020 in the Russian Federation, there was an increase in the number of patients with obesity from 1.7 to 2.1 million people.

Funding for the purchase of all these drugs was carried out from 3 sources: personal funds of citizens, and funds from the federal and regional budgets. The dynamics of costs, taking into account the sources of financing for the purchase of Sibutramine, Liraglutide and Orlistat, are shown in Fig. 4.

The share of budget funds spent on the purchase of these drugs ranged from 2 to 5% of all costs for pharmacotherapy (from 16 million in 2011 to 22.5 million in 2017). The costs from the personal funds of patients tended to grow and exceeded the costs of the federal and regional budgets many times over: from 2.7 billion rubles in 2011 to 5.5 billion rubles in 2021.

The proportion of people receiving obesity pharmacotherapy in the Russian Federation is about 0.5%. 58-66% of DDDs sales were carried out in 3 regions: Moscow, Moscow region and St. Petersburg.

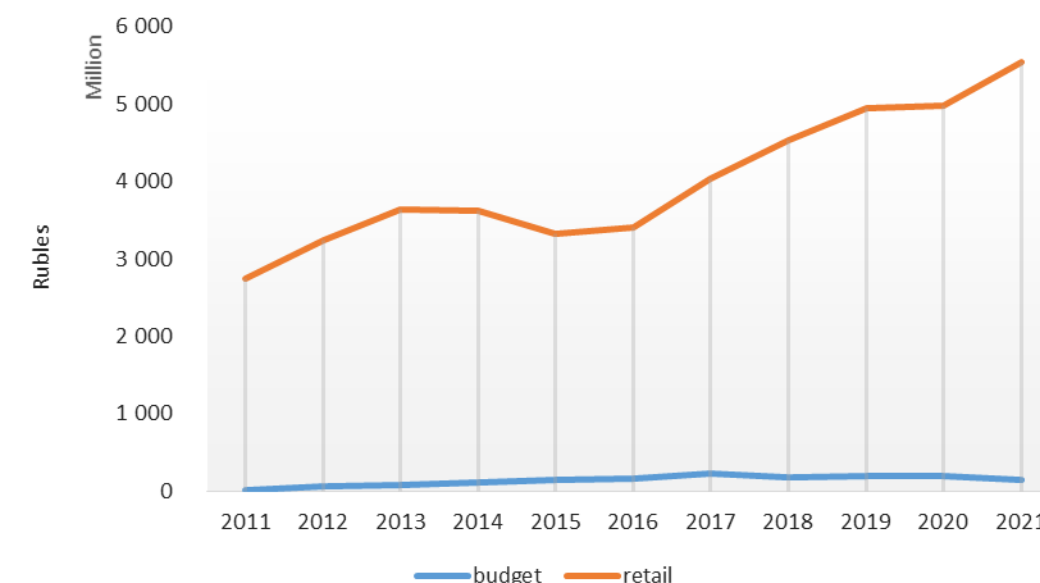


Fig. 4. Sources of financing for the procurement of orlistat, liraglutide and sibutramine in the period 2011-2021

## Conclusion

Pharmacotherapeutic approaches to the obesity treatment in the Russian Federation are used in no more than 0.5% of persons for whom it is indicated. Low efficacy, high frequency of adverse reactions, frequent weight gain after discontinuation of therapy, as well as low orientation of doctors to the need for pharmacotherapy are probably the main factors determining the low prevalence of pharmacotherapy in the treatment of obesity. Clinical and economic studies are required to assess the cost-effectiveness of using various options for drug therapy and bariatric interventions for obesity in the Russian healthcare system.