Pharmacological treatment of obesity: the past, the present and the future

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Introduction

The epidemic of obesity is now recognized as one of the most important public health problems facing the world today. Overweight and obesity, are the fifth most common risk factors for death. Moreover they are predisposing factor to develop other disorders such as dyslipidaemia, hypertenstion or diabetes type 2 and cardiovascular disease among other. It has also been related to some cancer and with physiological problems including depression and low self-esteem.

Overweight and obesity prevalence in adults

Overweight

- BMI index ≥ 25 kg/m²

Obese

- BMI index ≥ 30 kg/m²

Past anti-obesity therapies

Obesity is found in ancient time, and so do medications to treat it. Moreover most of the last century anti-obesity therapies are now withdrawn.

Current anti-obesity therapies

Nowadays there are only four drugs available in the market to treat obesity that have the approval of the FDA, whereas in Europe there is only three of them. Moreover, only two of those pharmacological treatments are approved for a long-term therapy (Orlistat and Lorcaserin) whereas the other two (Phentermine/topiramate and Naltrexone/Bupropion) are only approved for short-term management of obesity (≤12 weeks).

Future perspectives

Due to the risks of anti-obesity drugs that promote satiety, investigator are now trying to target other pathways involve in calorie restriction, exercise and also to act on peripheral tissue rather that in the central nervous system to avoid side effects of nowadays therapies.

Future anti-obesity therapies

- Promotion of pathways involved in hunger and calorie restriction are related with longer lifespan
- Calorie restriction reduce inflammation and down regulate immune responses which improved several risks factors for chronic diseases.
- Reseretinact as a calorie restriction mimetic and enhanced health indexes, despite not ameliorating obesity.

Conclusion

- Mechanisms underlying metabolism homeostatic energy needs to keep being investigate in order to identify new targets and also to have a better comprehension of the pathogenesis of obesity
- Pathway that do not involved in promotion of satiety may offer a solution to the development of new anti-obesity drugs with less side effects
- Meanwhile new anti-obesity drugs are discovered, governments should keep invest in obesity prevention.

Bibliography

Only relevant references are cited below. A detailed references list is available upon request for the committee: