



THE ROLE OF AUTOPHAGY IN ANOREXIA NERVOSA

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Introduction and Aim

Autophagy is a process of degradation of the damaged elements of the cell's structure; these are entire cell organelles or macromolecules; among them mainly malformed proteins. This mechanism prevents the accumulation of damaged proteins in the cell. One of the most well-known triggers of autophagy is starvation. In conditions of nutrient deficiency, the process of autophagy intensifies, the cell focuses on the processes necessary for its survival as well as for obtaining energy from redundant elements. In 2016, the Nobel Prize in Physiology or Medicine was awarded to Yoshinori Ohsumi for identifying genes responsible for the molecular mechanism underlying the phenomenon of autophagy. This discovery was the beginning of broader research in the role of autophagy in various medical conditions. The relationship between complications of anorexia nervosa - such as reduction of myocardial mass, decrease in granulocyte levels, and an increased level of transaminases - with the process of autophagy occurring at the cellular level has so far been little studied and requires more extensive research. The aim of the lecture is to present the current state of knowledge on autophagy and its role in the complications of anorexia nervosa based on previous research on autophagy in patients diagnosed with anorexia nervosa.

Discussion

To date, few studies on autophagy in patients diagnosed with anorexia nervosa have been conducted. The studies were carried out on liver cells using electron microscopy of liver biopsy samples or autophagosome marker antibodies, showing that as a result of starvation and chronic nutrient deficiencies, the process of autophagy in the liver cells of patients diagnosed with anorexia nervosa increases and plays a role in the adaptation to malnutrition, but it can also cause complications. Further research on autophagy in anorexia nervosa has the potential to suggest new strategies for preventing and treating the complications of anorexia nervosa or malnutrition caused by other medical conditions.

Methods and Materials

PUBMED/MEDLINE, Scopus, Embase and The Cochrane Library databases were searched using the following keywords: autophagy, starvation, fasting, anorexia nervosa, complications of anorexia nervosa. Articles in English and Polish were taken into consideration.

Conclusions

Previous studies indicate that autophagy plays a role in the pathophysiology of anorexia nervosa complications. Therefore, it is reasonable to develop further research on the role of autophagy in anorexia nervosa.

Results

The findings show that starvation-induced autophagy in patients with anorexia nervosa, initially protects cells enabling them to cope with nutrient deprivation. However, when starvation is critically prolonged and when body mass index reaches 13 kg/m² or lower, autophagy leads to cell death.

Keywords

autophagy, starvation, fasting, anorexia nervosa, complications of anorexia nervosa