



**Penishkevych Ya.I., Kuchuk O.P., Kuzio O.O., Tymofiychuk S.V.**  
**RISK FACTORS FOR PROGRESSION OF DIABETIC RETINOPATHY  
IN PATIENTS WITH TYPE 2 DIABETES MELLITUS**

*B.I. Radzikhovskiy Department of Ophthalmology  
Higher State Educational Establishment of Ukraine  
"Bukovinian State Medical University"*

A high prevalence of diabetes mellitus (DM) has emerged as a worldwide public health problem in the past 20 years. Type 2 diabetes (T2DM) is the most common form of DM, estimated to account for 85–90% of DM. T2DM affects over 246 millions of people worldwide and it is estimated to increase around 380 million until 2025.

Diabetic retinopathy (DR) is a major microvascular complication of diabetes, and it is the commonest cause of blindness in people of working age in the world. Risk factors for development and progression of DR include hyperglycaemia, nephropathy, genetic predisposition, hypertension and lipid metabolism.

A continuous relation exists between glycemic control and the incidence and progression of microvascular complications. Hypertension and smoking also have an adverse effect on microvascular outcomes.

Hyperglycemia is regarded as a major cause of DR. Improved glycemic control retards the development and progression of retinopathy in both type 1 and type 2 DM. However, worsening of retinopathy has been reported after rapidly improved glycemic control.

In the UK prospective diabetes study of patients with T2DM, an intensive glucose control policy that lowered glycated haemoglobin concentrations by an average of 0.9% compared with conventional treatment (median HbA1c 7.0% v 7.9%) resulted in a 25% reduction in the overall microvascular complication rate. It was estimated that for every 1% reduction in HbA1c concentration there is a 35% reduction in microvascular disease. It was shown (F.E. Shadracheva 2008) that for patients with type 2 diabetes, high HbA1c level is a predictor of rapid transition pre-proliferative stage DR to proliferative DR.

Among patients suffering from MD a significant number of cases (96%) were also diagnosed with diabetic microvascular retinal damage. The association of microalbuminuria with DR has been proved in the results of population-based study WESDR (Wisconsin epidemiological study).

Microalbuminuria is associated cross-sectionally with the presence of retinopathy in persons with diabetes and with the presence of proliferative disease in younger-onset individuals. These data suggest that microalbuminuria may be a marker for the risk of proliferative DR developing.

The UKPDS has further shown the value of an accurate blood pressure control in delaying the development of DR complications as well as other microvascular endpoints. Researchers in JAMA (Emdin C.A., 2014) concluded that people with DM who reached systolic blood pressure below 130 mm/Hg had 25% lower risk of stroke than those with higher blood pressure levels and also had a lower risk of retinopathy and albuminuria.

Nonetheless, DR occurs even with optimal glucose and blood pressure control. Currently, the contribution of genetic factors in the development of T2DM is not in doubt. Some patients with poor control of glycemia or blood pressure do not develop diabetic retinopathy even over prolonged periods of time, while others may develop diabetic retinopathy in relatively short periods of time despite good risk factor control. This was prominently illustrated in Joslin Medalist study which found that almost 50% of older diabetic participants in their study had no evidence of retinopathy despite surviving over 50 years with type 1 diabetes.

These findings emphasize the importance of careful long-term monitoring for people with DM to control blood pressure, decrease of cholesterol level in the blood serum, eliminating cigarette smoking, as well as the importance of integrating food and hygienic approaches on a large scale, to prevent the development of diabetes and its complications.

**Reva V.B., Sydorchuk R.I.\***  
**MULTIMODAL TREATMENT AND PREVENTION OF SEPTIC COMPLICATIONS OF ACUTE  
DESTRUCTIVE CHOLECYSTITIS**

*Department of Surgery №2  
Department of General Surgery\*  
Higher State Educational Establishment of Ukraine  
"Bukovinian State Medical University"*

During the last decades, there has been found a growing number of patients with acute destructive (necrotizing) cholecystitis. Especially there has been increase in the number of entities found with various kinds of complicated septic conditions. According to the literature reports, the number of patients operated in recent years with acute destructive cholecystitis complicated with abdominal sepsis is 12-20% of total patient operated on this pathology.

Tactics of surgical treatment of this disease is not always favorable, that's why mortality and postop morbidity remains high. The principles of surgical management of septic complications in acute destructive cholecystitis have not changed for a century. At the same time significant changes in the management of septic complications have affected the means and methods of treatment of septic complications in acute destructive cholecystitis.

The objective of the study is to reduce the incidence of postoperative complications, improve the results of treatment and prevention of septic complications in acute destructive cholecystitis, establishing patterns of development and progression of this disease.

The research consisted of an experimental part, which was performed on inbred white rats and also the clinical and laboratory examinations of patients with septic complications of acute destructive cholecystitis. All animals were