of the experiment, the animals were withdrawn from the experiment by decapitation under anesthesia, with follow-up Determination of glucose and insulin levels in the blood, as well as the lipid spectrum. Differences were considered significant at $p<0.05$.

Results and discussion. the blood glucose level of the animals in the control group remained stable throughout the experiment.

The animals of the 2nd group with the T2DM model who received dexamethasone showed significant hyperglycemia (the level of glucose in the blood serum was 50±1.45 mmol/l compared to 6±1.04 mmol/l in the control group). It increased by 8 times ($p<0.001$), the insulin level increased by 2 times.

With T2DM, not only carbohydrate, but also lipid and protein metabolism is disrupted. After 15 days from the beginning of the experiment, a statistically significant increase in the level of LDL, HDL, triglycerides and cholesterol in the blood of animals of the 2nd group with the T2DM model was noted compared to the control group. In the blood serum of animals with experimental type 2 diabetes, the cholesterol content increased by 2 times ($p < 0.001$), the amount of low-density lipoproteins increased by 4.2 times, the content of high-density lipoproteins did not change, it increased by 2.9 times ($p < 0.001$), triglycerides increased by 3.2 times

Conclusion. The obtained results indicate that with a single administration of dexamethasone at a dose of 125 mcg/kg of body weight for 15 days pathological processes characteristic of type 2 diabetes is reproduced. In animals with a model of type 2 diabetes an increase in the level of glucose, insulin, LDL, HDL, triglycerides and cholesterol in the blood of animals of the 2nd group with a model of type 2 diabetes compared to the control group. The created model can be used to study the pathogenesis of type 2 diabetes, as well as to study the effect of potential hypoglycemic agents

RADIATION-INDUCED ESOPHAGITIS IN PATIENTS RECEIVING RADIOTHERAPY FOR LUNG CANCER

Malwattage Jeewanthi Peiris, Handunsooriya K.M.H Mudiyanselage Takura Shevins, Najeeb Khan Mohamed Sajathkhan

Grodno State Medical University, Grodno, Belarus

Introduction. An inflammatory reaction of the esophagus brought on by radiation exposure is known as radiation-induced esophagitis, commonly affecting patients undergoing radiation therapy for malignancies like lung cancer, breast cancer, and lymphomas. Typically emerging within two to three weeks after treatment initiation, this condition manifests as odynophagia, dysphagia, and food impaction. The severity of acute esophagitis is classified using the Radiation Therapy Oncology Group (RTOG) acute esophagitis toxicity criteria.

Aim of the study. To assess factors influencing esophagitis severity based on tumor localization and treatment regimen.

Materials and methods. A retrospective analysis of outpatient records from the radiology department of Grodno City Clinical Hospital No. 3 was conducted. Data processing was performed using Microsoft Excel and Fisher's exact test calculator.

Results and discussion. The study included 15 male patients (mean age 66.3 years) diagnosed with non-small cell lung cancer from March to September 2024. Treatment was delivered using volumetric modulated dynamic irradiation. Among them, 3 patients had peripheral tumors, while 12 had central tumors. Three individuals were found to be at stage I, one at stage II, and eleven at stage III of cancer staging. From the first day of radiation therapy, all patients received proton pump inhibitors (PPIs) and antacids for esophagitis prevention, yet all developed symptoms according to the RTOG scale. The RTOG grading system classifies esophagitis severity from Grade 0 (no symptoms) to Grade 5 (death). Grade 1 represents mild symptoms requiring dietary adjustments, Grade 2 denoting intermediate symptoms needing narcotic analgesics or a liquid diet, Grade 3 representing severe symptoms with significant weight loss or dehydration requiring nutritional support, and Grade 4 includes complete obstruction, ulceration, or fistula, culminating in Grade 5, which signifies death. In our study, no patients developed Grade 4 or 5 esophagitis. One patient had Grade 1 esophagitis, ten had Grade 2, and one had Grade 3 esophagitis among those with central tumors in contrast, peripheral tumors were associated with 2 cases of Grade 1 and 1 case of Grade 2 esophagitis. Out of 12 patients with central tumors, 3 developed ipsilateral atelectasis. PET data were used to refine gross tumor volume (GTV) by integrating pre-radiation images and collaborating with radiologists. Seven patients received classical fractionation, 2 underwent a regimen of 2 Gy/day up to 60 Gy with simultaneous chemoradiotherapy, and 5 received 2 Gy/day up to 66 Gy. Hypo fractionated regimens were chosen for patients with comorbidities or poor ECOG status. Patients with atelectasis experienced Grade 2 esophagitis more frequently. Classical fractionation patients developed esophagitis at a median dose of 18-20 Gy (approximately fraction 9-10 or the end of week 2), while hypo fractionated patients experienced esophagitis at a median dosage between 18 and 21 Gy. The study revealed that esophagitis severity was significantly greater in patients with central lung tumors, particularly when acute toxicity occurred at total focal doses of 18-20 Gy. This highlights the need for vigilant esophageal complication management in patients with centrally located tumors. Fisher’s exact test showed no significant difference ($p > 0.5$) in esophagitis severity between classical and hypo fractionated regimens, indicating fractionation type does not affect toxicity.

Conclusion. In our cohort, esophagitis severity was predominantly influenced by tumor location. However, literature suggests that factors like patient somatic status and irradiated volume also contribute. Additionally, our findings indicate that conventional fractionation with a lower single-fraction dose does not reduce esophagitis severity compared to hypo-fractionation.