Case report

Patient with disseminated malignant tumor of the pancreas. Application of liposomal irinotecan as a new option of palliative treatment

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ABSTRACT

In palliative treatment of pancreatic neoplasms, chemotherapy regimens with gemcitabine, nab-paclitaxel, oxaliplatin, irinotecan, 5-fluorouracil or combinations of these drugs are used. The registration of liposomal irinotecan in the treatment of stage IV disease in patients with progression after gemcitabine creates new options for the treatment choice. The described case concerns a relatively young patient in whom the use of liposomal irinotecan in the registration indication turned out to be a safe and well-tolerated treatment.

Key words: liposomal irinotecan, malignant neoplasm of the pancreas, pancreatic cancer

INTRODUCTION

Neoplasms of the gastrointestinal tract are one of the most common reasons for hospitalization for the administration of chemotherapy both in Poland and in the Department of Oncology, Chemotherapy and Immunotherapy of Cancer at the Independent Public Clinical Hospital No.1 PUM in Szczecin, where the described case comes from. The experience of the team of oncologists from this center in the treatment of pancreatic cancer includes preoperative, adjuvant and palliative treatment. So far, in the treatment of patients with advanced or metastatic form of pancreatic cancer, chemotherapy according to the FOLFIRINOX regimen or gemcitabine in combination with nab-paclitaxel or in monotherapy, depending on the patient's general condition and performance, has been used. In subsequent lines of treatment, gemcitabine was administered as monotherapy or 5-fluorouracil-based regimens, mainly in combination with oxaliplatin or irinotecan. Palliative treatment is often difficult due to comorbidities, poor nutritional status, pain or other problems, such as obstruction of the bile ducts. Thanks to the cooperation of a multi-person team of oncologists, gastrologists and palliative medicine specialists, it is possible to optimize the treatment process of patients from this group, but their prognosis is still poor in terms of survival time.

The use of a regimen based on liposomal irinotecan in the described center is a new treatment option for patients, and an opportunity for oncologists to gather unique experiences. Due to the lack of reimbursement, financing of this treatment is usually beyond the capacity of the patient and the center. In the following case, liposomal irinotecan was used in combination with 5-fluorouracil and leucovorin. The drug was obtained thanks to a donation from the manufacturer. The patient received chemotherapy according to this schedule as part of the II line treatment, after using gemcitabine as monotherapy, which is consistent with the product registration.

CASE REPORT

A 48-year-old patient with a history of anemia, cutaneous Lyme borreliosis (after treatment), hiatal hernia, gastric diverticulum and after hysterectomy due to uterine fibroids, from August 2019 began to complain of burning pain in the epigastric region and weight loss (about 20 kg in total). In the abdominal ultrasound examination in September 2019, a hypoechoic lesion in the head of the pancreas was described, and outpatient diagnosis was recommended. Computed tomography (CT) of the abdomen and pelvis (with contrast) revealed: a 21 × 15 × 19 mm lesion in the abdominal part of the head of the pancreas, an increase in the density of adipose tissue around the head of the pancreas and the mesentery of the small intestine, and numerous small lymph nodes within it and scattered irregular tissue foci – the largest in the left epigastric region (17 × 12 × 13 mm), no evidence of vascular infiltration or metastatic changes in the liver was found. Gastroscopy carried out in October 2019 showed a hiatal hernia and gastric diverticulum, and endoscopic ultrasound (EUS) – a heterogeneous regular nodular lesion measuring 29 × 27 mm in the abdominal part of the pancreatic head and numerous metastatic lymph nodes, up to 15 mm in diameter in the area of the pancreas and large retroperitoneal vessels. Material was also obtained from the lymph node, in which an inflammatory infiltrate was diagnosed in the histopathological examination. Diagnostics was supplemented with chest X-ray; it did not show any metastatic changes. The concentration of the CA 19-9 marker was 100 U/ml.

On December 3rd, 2019, another EUS was performed and the material was collected, which allowed the pathologist to make a diagnosis: cancer cells – adenocarcinoma. In mid-December 2019, the oncology council recommended an urgent assessment of the stage of advancement (CT of the abdominal cavity) and a consultation with the result. A CT scan of the abdomen with the pelvis from January 2020 showed that the previously described infiltration in the abdominal part of the pancreatic head is now less visible, the assessment is uncertain, but there was an enlargement of lymph nodes and epigastric foci – up to 23 × 17 × 20 mm.

On January 21st, 2020, the oncology council organized a radiological consultation with the presence of the operator surgeon to assess the options for surgical treatment. After analysis, the lesion was considered inoperable due to intraperitoneal dissemination. Chemotherapy was recommended, followed by a follow-up CT scan. In mid-February 2020, the patient was not qualified for chemotherapy due to clinically severe jaundice. Mechanical jaundice was diagnosed due to compression of the tumor and on February 18th, 2020, sphincterotomy with SEMSpcov 10 mm prosthesis implantation was performed during endoscopic retrograde cholangiopancreatography. Before treatment, the CA 19-9 concentration was 325 U/ml. After the bilirubin dropped to about 2 mg/dl, the patient was qualified for chemotherapy. Due to the rapid progression of the marker and the severity of clinical symptoms, she was assigned to the unfit group, and as of March 20th, 2020, gemcitabine monotherapy was started. On admission, the patient was in the WHO 1 performance status, physical examination revealed palpable, painless resistance in the upper abdomen. When the COVID-19 pandemic began, in accordance with

the current recommendations of the Polish Society of Clinical Oncology the patient was offered to de-intensify the treatment – she refused. In the follow-up CT scan of the abdomen and pelvis performed on April 23rd, 2020, significant disease progression, an omental cake infiltration and fluid in the peritoneal cavity were found. Due to the large time interval between the baseline CT scan and the start of therapy, the patient's well-being and the decrease in the marker during treatment, it was decided to continue the administration of gemcitabine and perform another control CT (CA 19-9 of April 20th, 2020 – 129 U/ml, May 14th, 2020 – 93 U/ml). In the CT from the beginning of June 2020, further progression of the neoplastic disease was found in the form of an irregular area in the IV B segment of the liver. This correlated with the clinical picture, as the physical examination revealed ascites and moderate symmetrical pasty swelling of the lower legs, and the marker increased to 239 U/ml.

On July 4th, 2020, the patient started second-line liposomal irinotecan treatment in combination with 5-fluorouracil and leucovorin. After the second cycle, jaundice was diagnosed and the patient was referred for prosthesis replacement. An additional stent was placed in the biliary tract.

Until September 25th, 2020, the patient received a total of five treatment cycles with very good clinical tolerance – ascites remained at a stable level, the patient did not require decompression paracentesis, and was active (she ran a household). It did not require any dose reduction. On October 7th, 2020, she reported for the sixth course of treatment. She was slightly more weak, swelling and ascites increased, but the patient still remained in a satisfactory status of physical performance. Due to the waiting for the next drug donation, fluorouracil with leucovorin was administered according to the LF4 regimen.

On October 21st, 2020, when the CT report was not yet available, the patient received the seventh full course of treatment: liposomal irinotecan, 5-FU and leucovorin. Due to the build-up of ascites and edema, as well as the increase in the concentration of CA 19-9 marker, disease progression was suspected.

In mid-October 2020, imaging tests were performed, on the basis of which massive ascites (progression), features of intraperitoneal dissemination as in the previous study, and progression of the size of the neoplastic lesion in the head of the pancreas were found. On November 4th, 2020, the patient was qualified for III line treatment. Symptomatic treatment was considered indicated due to complications of the neoplastic disease. She was referred to the internal medicine ward to compensate for the concentration of ions and to transfuse red blood cells. After discharge, she did not contact the oncologist. The patient probably died at the beginning of December as was not found in the national electronical verification system (negative result in the Electronic Verification of Eligibility of Beneficiaries).

DISCUSSION

This case was described because it concerned a relatively young patient, while the average age of pancreatic cancer in the population is about 70 years [1]. The described patient was not affected by known risk factors, such as smoking, obesity, physical inactivity, diabetes or chronic pancreatitis [1, 2]. The possible exposure to toxic factors on the farm remains a matter of guesswork. The family history of neoplastic diseases could be aggravating: maternal ovarian cancer, sister's endometrial cancer, father's lung cancer, not confirmed by available documentation. Due to the relationship between the low incidence rate and mutations, determination of the *BRCA2* mutation in the patient could be considered, which, however, was of no importance for the planning of its treatment. It is worth emphasizing that for most of the duration of the therapy, no significant side effects directly related to the administration of the drug were noted. Only in August 2020, grade 2 hypertransaminasemia and hyperbilirubinemia were diagnosed according to the common terminology criteria for adverse events (CTCAE), possibly related to obstructive cholangitis. Significant haematological complications (leukopenia 1.94 thousand/µl and CTCAE grade 3 anemia) occurred after the seventh treatment cycle, when the disease showed significant progress and worsening of the neoplastic cachexia. The patient did not report any episodes of diarrhea or nausea, which was typical in the NAPOLI-1 study [3].

CONCLUSIONS

In the author's opinion, the use of the combination of liposomal irinotecan with 5-fluorouracil and leucovorin contributed to the maintenance of a satisfactory quality of life during the II line of therapy and quite satisfactory disease control. In this case, the assumptions of palliative treatment were met in view of enabling the patient to work and function independently without being exposed to significant side effects.

References

1. Ducreux M, Cuhna A Sa, Caramella C et al. Cancer of the pancreas: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2015; 25(suppl 5): V56-V68.
2. Zalecenia postępowania diagnostyczno-terapeutycznego w nowotworach złośliwych 2019 r.
3. Wang-Gillam A, Hubner RA, Siveke JT et al. NAPOLI-1 phase 3 study of liposomal irinotecan in metastatic pancreatic cancer: Final overall survival analysis and characteristics of long-term survivors. Eur J Cancer. 2019; 108: 78-87.

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