



Gastrointestinal Cancer and Vaccination Safety during COVID-19 Pandemic

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Abstract

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BACKGROUND: During our past 18 months, we must be faced with the current COVID-19 pandemic era with much uncertainty in the continuation of multimodality treatment of the gastrointestinal cancer patients. Especially in this immunocompromised group with the history of previous chemotherapy treatment, these patients have an increased risk of COVID-19 transmission. Many studies have been reported about the current recommendation for gastrointestinal cancer patients during this pandemic, but there might be a lack of evidence about the safety of vaccination for the gastrointestinal cancer patients.

AIM: Since the vaccination has been approved by our government medical support, we would evaluate the safety of the COVID-19 vaccination program in gastrointestinal cancer patients.

METHODS: All gastrointestinal cancer patients who have been already diagnosed with cancer will be included in this study. The vaccine-related sign symptoms will be recorded and evaluated. The chemotherapy schedule was not been interrupted following the vaccination. The patient who refused to receive the second vaccination dose will be excluded from this study.

RESULTS: Thirty-two patients were included in this study (our past 6-month evaluation from February till August 2021), colorectal adenocarcinoma was the most common gastrointestinal cancer according to organ-specific (25 patients), the others were gastric adenocarcinoma, pancreatic adenocarcinoma, and small bowel gastrointestinal stromal tumor. Both of them already received two doses of COVID-19 vaccine during this period, we reported there was no side effect related to these and the chemotherapy cycle has not been interrupted during vaccination. All of the patients could be tolerated it well and did not refuse to continue the treatment.

CONCLUSION: There were no significant signs and symptoms of vaccine-related side effects on gastrointestinal cancer patients. COVID-19 vaccination during this pandemic and following the chemotherapy schedule on any kind of gastrointestinal cancer patients was safe and could be suggested as a routine protocol.

Introduction

Gastrointestinal cancer is the third most common leading cause of death according to the cancer location. More than 50% of patients usually have been diagnosed as advanced stage including the locally advanced cases. Both of them needed the adjuvant chemotherapy to control the local recurrence and distant metastases during long-term follow-up. On the other hand, in the past 2 years, we must face to the pandemic condition which could limit the comprehensive treatment of gastrointestinal cancer cases. During our past 18 months, we must be faced with the current COVID-19 pandemic era with many uncertainties in the continuation of multimodality treatment of the gastrointestinal cancer patients. Especially in this immunocompromised group with a history of the previous chemotherapy treatment, these patients have an increased risk of COVID-19 transmission [1].

In the general population, our health ministry and government already recommended the COVID-19 vaccination. However, what about the gastrointestinal

cancer patients? Many studies have been reported about the current recommendation for gastrointestinal cancer patients during this pandemic, including the screening for early diagnosis and definitive treatment of these cases, but there might be a lack of evidence about the safety of vaccination for the gastrointestinal cancer patients [2].

Methods

This is an observational study on gastrointestinal cancer patients whose already been treated with adjuvant chemotherapy for their locally advanced cancer in any site of the gastrointestinal tract. After the first wave of the pandemic ended, the vaccination has been approved by our government medical support, we would evaluate the safety of the COVID-19 vaccination program in gastrointestinal cancer patients. All gastrointestinal cancer patients who have been already diagnosed with cancer will be included in this study. The vaccine-related sign symptoms will be recorded and

evaluated. The chemotherapy schedule was not been interrupted following the vaccination. The patient who refused to receive the second vaccination dose will be excluded from this study.

Results

This observational study on the safety of the COVID-19 vaccine on any site of organ-specific gastrointestinal cancer whose undergoing adjuvant chemotherapy during a pandemic was conducted in our single academic center. Thirty-two patients were included in this study, the most common respondents are colorectal cancer patients, which has been reported in 25 patients. The characteristics of this data could be seen in Table 1. Fever and pain were the most common clinical symptoms following the vaccination program and could be tolerated well by the patients. There was no lethal morbidity during this study. Both symptoms could be treated with medication without rescheduling that adjuvant chemotherapy.

Table 1: Data characteristics

Gastrointestinal cancer	n	Fever	Pain	Malaise
Colorectal	25	4	2	Nil
Gastric	1	Nil	Nil	Nil
Small bowel GIST	2	Nil	1	Nil
Pancreas	4	1	Nil	Nil

Discussion

Since the COVID-19 pandemic started earlier in the 2020, gastrointestinal cancer patients as an immunocompromised group population could face a high risk of morbidity and mortality associated with confirmed COVID-19 and with no previous history of the vaccine. Recommendation for the continuation of the screening and treatment like adjuvant chemotherapy has not been interrupted by this pandemic condition with any limitation and universal awareness of local transmission during both procedures. Many studies already reported the increase not only in the morbidity and mortality of the gastrointestinal cancer patients during a pandemic, but also the increasing emergency presentation of them, this condition could play an important role in increasing the post-operative morbidities [3], [4]. European Society of Medical Oncology (ESMO) already recommended and advised this COVID-19 vaccine to reduce the risk of infection during multimodality treatment. The next question for us was the timing of the vaccination and is that safe to give a vaccine during post-operative period? Is that safe to give vaccine during chemotherapy? Is that safe to give radiation therapy following vaccination? If that

was not too safe for them, so, when was the safest time or interval to give the vaccination?

No one guideline can be covered and answered those questions, we must evaluate the patient, especially for gastrointestinal cancer patients whose already been treated with adjuvant therapy such as chemotherapy and radiation therapy [5]. Stability of the general condition of the patient is the key point to deciding the timing of vaccination for COVID-19. Many controversies might be remain uncertain until today. Whether we give the vaccine directly after definitive surgery or after the adjuvant treatment, it might have its consequences, the side effect of this vaccine should be predicted and informed to the patient before [3], [6]. Clinical symptoms which could be reported during the COVID-19 vaccine are pain at the injection site, fever of various duration, and malaise. These side effects actually could be detected earlier and treated as soon as possible by better education and follow-up after vaccination [7].

According to this study, pain and fever are the most common clinical symptoms after COVID-19 vaccination whatever the brand which has been given. This minor reaction could be tolerated well by the patients, could be managed conservatively, and did not interrupt the schedule of the multimodality treatment of the gastrointestinal cancer patients.

With the increasing mortality of the gastrointestinal cancer patients during a pandemic, we must consider many factors which could have a role in them [5], [8]. Delayed presentation and delayed referral during a pandemic are the most common causes of the increasing morbidity and mortality after surgery. On the other hand, in the other group of patients, like the post-operative cases, local transmission should be evaluated and one of our effort to reduce the infection is to give vaccination to these gastrointestinal cancer patients [9]. As our clinical guide and judgment to give this vaccine, we can evaluate the pre-vaccination condition of the patients using the scoring from European Clinical Oncology Group (ECOG) Performance Scoring, which can be adopted from the chemotherapy checklist as we already used today.

Conclusion

According to our observational study on gastrointestinal cancer patients whose already been treated with routine chemotherapy, we can conclude that during the first and second wave pandemic, there were no significant sign and symptom of vaccine-related side effect on gastrointestinal cancer patients. COVID-19 vaccination during this pandemic and following the chemotherapy schedule on any kind of gastrointestinal cancer patients was safe and could be suggested as a

routine protocol. Further evaluation should be needed for clinical judgment on the safe timing to give these vaccines on gastrointestinal cancer patients following major surgical procedures, not only after adjuvant treatment which we have chosen.

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