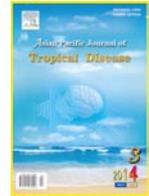


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Cancerous patients and outbreak of *Escherichia coli*: an important issue in oncology

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PEER REVIEW

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Comments

This is an interesting review on *E. coli* infection. It addresses the specific issue linking between infectious medicine and oncology. This way of presentation is interesting and rarely reported. The knowledge can be useful for general physician, scientist and expert. It might be the data for further guideline setting in oncology as well. Details on Page 205

ABSTRACT

The widespread of the *Escherichia coli* outbreak in Europe becomes an important public concern at global level. The infection can be serious and might result in death. The retrospective literature review on this specific topic is performed. In this specific brief article, the author presented and discussed on the problem of *Escherichia coli* infection in the cancerous patients. This is an actual important issue in medical oncology for the scenario of *Escherichia coli* epidemic.

KEYWORDS

Escherichia coli, Epidemic, Cancerous, Oncology

1. Introduction

The widespread of the *Escherichia coli* (*E. coli*) outbreak in Europe becomes an important public concern at global level. After its first appearance in Germany, the infection continuously progresses into many countries and thousands of infected cases are accumulated reported with some deaths^[1–8]. Finally, the pathogenic bacteria is successfully identified to be the *E. coli* serotype O104:H4^[1–8].

Due to the nature of severe bacterial infection, the disease becomes an important disease under surveillance. The disease usually presents as severe diarrhea with some important complications (such as hemolysis, thrombocytopenia and renal failure). As noted, the infection can be serious and might result in death. In this specific brief article, the author presented and discussed on the problem of *E. coli* infection in the cancerous patients. This is an actual important issue in medical oncology for the scenario of *E. coli* epidemic.

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2. *E. coli* outbreak among the cancerous patients

It is no doubt that *E. coli* infection can be seen elsewhere, especially as nosocomial infections. The nosocomial *E. coli* infection is a common problem in internal medicine. However, the outbreak of *E. coli* is not very common. Among those outbreaks, the outbreaks in cancerous patients are rare but very important. Focusing on the outbreaks, those events are usually small and identified in the hospitals and usually under reported.

The problem usually starts in the medical oncology ward. The drug resistance is usually identified. Yoo *et al.* noted that “quinolone-resistant *E. coli* could be an emerging threat to neutropenic patients with leukemia who receive a quinolone prophylactically^[9].” In many cases, the problems of drug resistance are the multiple drug resistances (MDR), which are hard to manage. The risk factors for having the MDR include the previous chemotherapy and prior admission^[10]. Indeed, it is reported that *E. coli* is one of the most common pathogen identified in medical oncology hospital^[11]. However, if the good infectious control is implemented, outbreak can be successfully controlled^[11].

3. The clinical problems of cancerous patients in the *E. coli* outbreak

Although there is still no present evidence on the present problematic serotype O104:H4, the problem of infection among the cancerous patients is confirmed for *E. coli* infection in general. Increased severity among cancerous patients can be observed^[12]. High fatality rate can be seen^[12]. This is mainly due to the underlying severity of cancer and immunosuppressive therapy^[12].

Nevertheless, the problem in the hospital is usually individual scenario of each hospital and can be managed if the good control of infection protocol is implemented. The concern in the epidemic scenario is on the cancerous patients in the community. Generally, the community acquired *E. coli* is not common and might be detected in the asymptomatic cancerous patient^[13]. It is proved that cancer is an important high risk factor for getting community acquired *E. coli* infection (relative risk=11.1)^[14].

Community acquired *E. coli* infection should be presently considered. Due to the nature of the immune defect cases, the cancerous patients are prone for getting infection. Although there is no report on the problem on infection in cancerous patients during outbreak it is no doubt that the problem can exist.

4. Is there any change of diarrhea and associated complication of *E. coli* infection among cancerous patient?

An important problem to be answer is the specific clinical presentation of the cancerous patient getting *E. coli* infection. Although the characteristic of diarrhea is not different from general case a more severe disease might occur. The neutropenic enterocolitis is the severe form of diarrhea that should be kept in mind for the cancerous case with *E. coli* induced diarrhea^[15]. This condition is usually fatal if it is delayed diagnosed and managed.

Focusing on the hemolytic uremic syndrome (HUS), the most important complication of *E. coli* infection, the more severity might be expected^[16–20]. The reason is HUS might be seen in the cancerous patients without infection and this is usually due to interleukin treatment^[15,21]. Co-induction of the HUS might be expected. Finally, it should be noted that cancer can also be the cause of recurrent HUS^[21].

5. Conclusion

It is no doubt that the cancerous patient is prone to *E. coli* infection due to the poor immunity status. The community acquired infection during the *E. coli* epidemic of the cancerous patient is a condition to be concerned.

Conflict of interest statement

We declare that we have no conflict of interest.

Comments

Background

This is not a research but a good review in an interesting topic in tropical medicine. The linkage between infectious disease and cancer can be seen and this can be useful article for future reference.

Research frontiers

This review is original and address interim topic between infectious medicine and oncology. Of interest, this area of report is rare and the present paper can be a good piece of work in this interim knowledge.

Related reports

There is no previous report in this field. No similar report in database can be seen.

Innovations & breakthroughs

The work is a review but it is novel since it report the combined topic between oncology and infectious medicine. This is a useful and new knowledge that can contribute to tropical medicine field. The message let the practitioner concern on the importance of infection among cancerous patients.

Applications

The future application based on the present report can be expected. First, the application in infectious medicine can be the consideration of the infectious medicine physician in caring the patients with *E. coli* infection in case that the concomitant cancer can be seen. Second, vise versa, the similar application can be levied for the oncologist.

Peer review

This is an interesting review on *E. coli* infection. It addresses the specific issue linking between infectious medicine and oncology. This way of presentation is interesting and rarely reported. The knowledge can be useful for general physician, scientist and expert. It might be the data for further guideline setting in oncology as well.

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