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Infection-control Practices for Cancer Survivors after Chemotherapy Treatment



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Title: Infection-control Practices for Cancer Survivors after Chemotherapy Treatment

Introduction

Infections can lead to a serious complication for the patients undergoing cancer treatment plans with its extensive consequence of neutropenia, moreover, they are the most common cause of death that can be prevented (Thom et al., 2013). Preventions related to the infection are dependent on the treatment of neutropenia or different immunological deficiencies (immunoglobulins administration, colony-stimulating factors, and reduced-dose chemotherapy patterns), infection control (control and infection prevention processes), pre-emptive antimicrobials and prophylaxis (antiviral, antifungal, antibacterial) (Chopra et al., 2010). Measures for infection-control which are formulated to avoid the transfer of infectious pathogens to the patients from environmental, human or any other sources are appeared to be least combative (Eskander et al., 2013).

Though, the implementation of these control measures in the cancer survivors is greatly heterogeneous (Frenzel et al., 2016). The present measures comprises of simple interventions for example, using barriers (mask, gown, or gloves), sterile or low-bacterial food, hand hygiene, to complex biomedical engineering measures for infection control such as air-quality and ventilation technologies with the goal of reducing the risk factors of catching fungal or bacterial infections. Such practices are linked with significant costs posed to the health-care authority. Isolation interventions can lead to the psychological stress to the individuals and may establish a barrier with the interdisciplinary team (Shamsi et al., 2020). The advantage, effectiveness, and burden caused by such interventions for the cancer survivors are vague in the past researchers. In addition, cancer patient vary in their building risk to get infected, with those patients who have

allogeneic-haematopoietic-stem-cell-transplantation (HSCT) as well as patients with acute leukaemia with greater risk (Lagunes et al., 2021).

Key Research

Since infection and control is a major concern in the healthcare and clinical settings, there are many researches available in the given context. Woolner et al. (2012) conducted a study on 56 patients and 78 staff members in which the author has analysed the infection control suggestion for the cancer patients with neutropenia risk. This research has compared the measures for infection control suggested to adolescent and pediatric patients with cancer who are undergoing chemotherapy sessions in two different centres of Africa and the UK. The results of the study showed that precautionary measures taken in the UK are different from Africa, except the fact that both of them believed that inpatient isolation was not needed (Woolner et al., 2012). On the contrary, a research study by Schlesinger et al. (2009) has investigated the interventions for infection control among cancer patients. It can be evaluated from the findings of Schlesinger et al. (2009) that interventions of protective isolation such as prophylactic antibiotics administration reduced the rate of mortality among the patient of cancer or recipients with stem-cell transplant at high infection risk. This can also be seen that outpatient of these recipients decrease the mortality rate in observational research and they must be further examined through randomised trials.

Similarly, Fillmore et al. (2021) studied the outcome and prevalence of coronavirus infection among the cancer patients in which it was found that among total 22914 participants with cancer, 1794 were tested COVID-19 positive. The occurrence of infection was identical over the age-group, however, the results showed that greater prevalence was seen among the African American as compared to White population and in subjects with malignancy

(hematologic) in comparison with the patients with solid tumours. This can be evaluated from the findings of Fillmore et al. (2021) that cancer pre-existence affects eventual outcomes as well as prevalence of COVID-19 infection. The overall attributable mortality of COVID-19 among the patients with cancer is mainly affected by certain cancer type, comorbidity, and age. In another research conducted by Godfrey and Schouten (2014), best practices for infection control in resource-limited settings were observed. It can be interpreted from the findings of Godfrey and Schouten (2014) that infection control practices in the clinical settings involve the establishment of efficient and successful policies on particular aspects for example respiratory and hand hygiene. Furthermore, infection prevention among health practitioners as well as occupational exposure management to transferable pathogens are significant dimensions of the major role played by the infection-control experts. It can be observed that hand hygiene decreases healthcare related infection and best practices might be executed in further research settings. The review of past researches further develop a need to seek further interventions for infection control such as air-quality and ventilation technologies that can help the management of cancer patients at a broader term.

Justification of Proposal

The past literature shows that the infections particularly among the patients with cancer have been identified as the major concern that affects their overall health and key source of negative health outcomes in patient recovery whose immune system is already weak due to chemotherapy treatment (Thom et al., 2013). In the period of increasing infection and anti-microbial resistance, there is a lack of evidence and researches that focus on the reliability on infection control and its prevention. For this context, a study is needed that review prospective

comparative researches that have identified the measures for infection control for patients with cancer who are taking chemotherapy treatment.

Eskander et al. (2013) noted that patients with cancer taking chemotherapy sessions require information related to the drugs induced and they need to maintain self-care in order to prevent complications and further infections as their immune systems have become weak. To develop the deep understanding about the infection control, research studies are needed in the body of literature to promote self-care and prevention strategies to control infections among the cancer patients. This has also been seen that transmission of infection regularly happens during the medical processes, when the health practitioners unable to follow aseptic measures (Frenzel et al., 2016). Therefore, non-compliance by the health workers who are exposed to the patients should also be addressed in the literature studies. Moreover, the findings of the existing studies do not give generalise results for all the cancer patients who are undergoing chemotherapy. This is because of vague past findings or smaller sample size taken by the researcher. The current study will fill these research gaps by highlighting strict infection control and prevention practices within the healthcare facilities and well as suggesting self-care practices that are significant in further spread or development of infections among the cancer patients.

Aims

The primary aim of this research is to examine the evidence for interventions for infection control among the cancer survivors after chemotherapy as well as haematopoietic stem-cell recipients. Moreover, the current research is also aimed at evaluating all-cause mortality that joins the impacts of such interventions on safety, cancer treatment, and infectious complications.

Proposed Action Plan

A systematic literature review is opted by the author of this study in which published research articles will be identified on infection prevention and control related to the cancer patients. The databases used for searching the relevant studies include CINAHL, PUBMED, and Science Direct from 2008 and onwards. The literature search strategy will use medical subject terms and truncated the text-words partly. To analyse the data extracted from the selected studies will be performed by using content analysis in which themes will be generated from the text obtained through the articles. The search will be limited to English language research articles and the bibliography of the selected articles will also be screened for more relevant research papers. In addition, CASP checklist will be used by the author for the quality assessment of the selected papers, which will give more authenticity and relevance to the current research.

The rationale of choosing this method is that it provides a clear understanding about the research issue studied in this research. With this method, the results can be systematically evaluated and it will allow the author in providing the final inference. As it is highlighted by Frenzel et al. (2016), through systematic literature review, the data findings can be gathered and summarised easily. Moreover, this type of methods and techniques will also be cost-effective and less time-consuming for the researcher. Chopra et al. (2010) and Lagunes et al. (2020) believed that data collection and generalisation with this systematic approach is very simple in comparison with other approaches such as qualitative and quantitative approaches. Thus, this contributes to another significant factor for choosing the systematic literature review method as it will allow the research to provide generalizable results which can benefit a larger community (Rolston, 2017).

Ethical Issues

Since this research study is based on cancer patients, therefore, privacy and confidentiality of participants is highly important. However, the ethical approval from the research committee is not mandatory in this research because the study will only use the systematic review of literature which is already present in the databases. However, the real identities and codes that represent the patient data in the selected articles will be kept confidential to maintain high research ethics during this study.



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References

- Al-Shamsi, H.O., Alhazzani, W., Alhuraiji, A., Coomes, E.A., Chemaly, R.F., Almuhanha, M., Wolff, R.A., Ibrahim, N.K., Chua, M.L., Hotte, S.J. and Meyers, B.M., 2020. A practical p.e936.
- Chopra, T., Alangaden, G.J. and Chandrasekar, P., 2010. Clostridium difficile infection in cancer patients and hematopoietic stem cell transplant recipients. *Expert review of anti-infective therapy*, 8(10), pp.1113-1119.
- Eskander, H.G., Morsy, W.Y.M. and Elfeky, H.A.A., 2013. Intensive care nurses' knowledge & practices regarding infection control standard precautions at a selected Egyptian cancer hospital. *prevention*, 4(19), pp.160-174.
- Fillmore, N.R., La, J., Szalat, R.E., Tuck, D.P., Nguyen, V., Yildirim, C., Do, N.V., Brophy, M.T. and Munshi, N.C., 2021. Prevalence and outcome of COVID-19 infection in cancer patients: a national Veterans Affairs study. *JNCI: Journal of the National Cancer Institute*, 113(6), pp.691-698.
- Frenzel, E., Chemaly, R.F., Ariza-Heredia, E., Jiang, Y., Shah, D.P., Thomas, G., Graviss, L. and Raad, I., 2016. Association of increased influenza vaccination in health care workers with a reduction in nosocomial influenza infections in cancer patients. *American journal of infection control*, 44(9), pp.1016-1021.

- Godfrey, C. and Schouten, J.T., 2014. Infection control best practices in clinical research in resource-limited settings. *Journal of acquired immune deficiency syndromes (1999)*, 65(01), p.S15.
- Reidy-Lagunes, D., Saltz, L., Postow, M., Scordo, M., Moskowitz, A., Tew, W., Zamarin, D. and Redelman-Sidi, G., 2021. Recommendations for testing and treating outpatient cancer patients in the era of COVID-19. *JNCI: Journal of the National Cancer Institute*, 113(7), pp.820-822.
- Rolston, K.V., 2017. Infections in cancer patients with solid tumors: a review. *Infectious diseases and therapy*, 6(1), pp.69-83.
- Schlesinger, A., Paul, M., Gafer-Gvili, A., Rubinovitch, B. and Leibovici, L., 2009. Infection-control interventions for cancer patients after chemotherapy: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, 9(2), pp.97-107.
- Thom, K.A., Kleinberg, M. and Roghmann, M.C., 2013. Infection prevention in the cancer center. *Clinical infectious diseases*, 57(4), pp.579-585.
- Woolner, A.F., Davidson, A., Skinner, R. and King, D., 2012. Evaluation of infection control advice for patients at risk of chemotherapy-induced neutropenia in 2 pediatric oncology centers: Cape Town, South Africa, and Newcastle-Upon-Tyne, UK. *Pediatric hematology and oncology*, 29(1), pp.73-84.