**Reflective Assignment on Managing the Care of a Patient who has Ifosfamide-induced Neurotoxicity**

**Table of Contents**

[Introduction 2](#_Toc72454464)

[Discussion about reflection 2](#_Toc72454465)

[Description 2](#_Toc72454466)

[Feeling 3](#_Toc72454467)

[Evaluation 3](#_Toc72454468)

[Analysis 4](#_Toc72454469)

[Conclusion 5](#_Toc72454470)

[Action plan 5](#_Toc72454471)

[Conclusion 7](#_Toc72454472)

[Reference list 8](#_Toc72454473)

# Introduction

Neurotoxicity happens when people are exposed to manufactured or natural toxic substances. It alters the normal activities of the nervous system and even kills the neurons. Ifosfamide is an essential agent used in the different varieties of cancer like gynaecological cancer, lymphoma, testicular cancer and sarcomas (Lentz *et al.* 2020). These agents can badly affect the nervous system and damage the neurons and exert dangerous levels of toxicity. The present adjective assignment focuses on the management of a patient suffering from Ifosfamide-induced Neurotoxicity.

# Discussion about reflection

In order to reflect the personal experience about the management of patients with the ifosfamide-induced neurotoxicity, I think ***Gibbs reflective cycle*** will be best suited. As mentioned by Li *et al*. (2020), Gibbs reflective model helps nurses to express their feelings about the care approach and experiences. Using this model would help me to reflect on my experience to manage the patient suffering from ifosfamide-induced neurotoxicity. With the help of six important stages of this model, the experience I have gathered can be expressed; these stages are as follows:

## Description

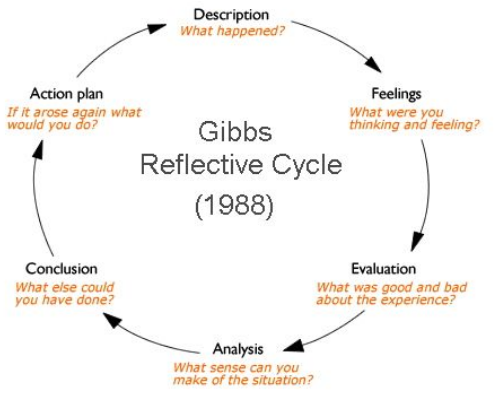
Ammy was a 55 years old woman suffering from a chronic stage of sarcoma. As mentioned by Riedel *et al*. (2018), sarcoma is a type of cancer affecting the bone or in the soft tissues of the body. The soft tissues or bones include cartilage, muscle, fat, blood vessels, fibrous tissue, and other connective or supportive tissue. She has been prescribed by her doctor for chemotherapy with the ifosfamide. As the case was severe, she has been taking a 2g/m2 dose of ifosfamide each day. As a result of this, she has developed toxicity induced by ifosfamide. Corticosteroid therapy and methylene blue application was introduced by me to take care of the Ammy. I was responsible for the administration of the methylene blue that helps in decreasing C-GMP and vascular smooth muscle relaxation (Synder *et al.*, 2017).

As a nurse, it was my duty to support the physical and mental condition of patients and help them to cope with the existing environment. As mentioned by Atchison *et al.* (2018), health care communication is necessary for nurses to understand the needs and requirements of patients. I have applied different forms of skills to explore the issue facing Ammy from the last six months. I have applied my critical thinking skill, communication skill and conflict resolution skill in this case. According to Çelik *et al.* (2018), hallucinations, stress, and muscle twitching is a common form of a symptom of ifosfamide induced neurotoxicity. The application of all these skills has helped me to identify the issue actually she faced.

## Feeling

I was feeling sad for Ammy as she was 55 years old, and she has been suffering from the ifosfamide induced neurotoxicity just because of the chemotherapy with the ifosfamide agent she has been referred. I need to share one thing that she was from a different cultural group from me. As mentioned by Betancourt *et al.* (2019), cross-cultural communication helps in paramount better care of patients. As she was from a different cultural group, it was an issue for both of us to explain their needs after all. I was feeling disappointed when I found that toxicity was so serious for Ammy. If I had effective cross-cultural communication skills, then I would have been able to identify the issue before six months of continuous administration of the ifosfamide for management of her sarcoma. It was a really bad experience for me to identify the Ammy both with sarcomas as well as ifosfamide induced neurotoxicity.

In order to manage further degradation of the health condition of the Ammy, I have identified my needs in the improvement of my cross-cultural communication skill. In addition to this, I have identified needs for improvement in time management along with creativity so that I can manage further issues as early as possible if she faces any in future. I was also feeling happy when I applied methylene blue on Ammy as per the direction of the doctor. It helps to reduce toxicity by reducing the chloroacetaldehyde formation from the breakdown of the ifosfamide.



**Figure 1: Gibb’s reflection model**

(Source: Adapted from Riedel *et al*. 2018)

## Evaluation

There were both positive and negative aspects present in the experience gained by me. Both positive and negative areas of experience would help me in the future to become a successful health care specialist. I was able to manage her needs about the health care demand day by day that have helped me to develop a suitable friendship and connection with her. As mentioned by Sharples *et al.* (2017), critical thinking is necessary for the health care management process. I was happy to find myself effective enough to think about the aspect of toxicity critically. The good thing about the experience was that I had applied all my knowledge and skills that I have learned from courses regarding the management of patients with the help of methylene blue and oxygen therapy to make the nerve cell activity in the CNS system. As opined by Yeager and Basnet (2020), ifosfamide is responsible for the increase in the level of glutaric acid and sarcosine in urine. Increased level of glutaric acid in term affects the conduction of neuron and their function regarding CNS (Bhurtel *et al.* 2018). It also releases cholythiline that acts itself as a neurotoxic was responsible for damaging the nerve cells permanently. The good thing was that the application of methylene blue helped to provide positive responses from Ammy. Within a month, she returned back to a certain normal condition.

The bad thing that has affected my experience as a nurse responsible for managing the issue of Ammy. I have found that I have poor skill in understanding the issues faced by my patient due to the toxicity of the ifosfamide responsible for the management of Sarcomas. I was unable to communicate with her very effectively due to my lack of cross-cultural communication skills. I also lacked in the decision-making skills that have hindered me from making aware of the family members of Ammy as early as possible. Though I have informed them about such toxicity symptoms earlier, I think I have to be more careful about the symptoms so that I can manage the issue initially after it happens. I have poor analytical skills that hinder me from confirming the toxicity.

## Analysis

From the overall discussion, it is clear that ifosfamide is used widely by healthcare professionals for the management of different forms of cancer. It is mostly used in the management of gynaecological cancer, lymphoma, testicular cancer and sarcomas. Thus, agents can badly affect the nervous system and damage the neurons and exert dangerous levels of toxicity. Ammy, being 55 years old, was suffering from long term Sarcomas that needed effective application of the ifosfamide. I have identified that a doctor of the Ammy has suggested the ifosfamide dose of 2g/m2 per day. Though the doctor was aware of the critical negative impact of such an agent upon the never, still it has been recommended because there were no other options left. Though the agent creates toxicity in rare cases but has badly affected Ammy and decreases her wellbeing to cope with the Sarcoma in future.

In addition to this, I have identified certain areas that I need to focus on in future for improvement. As a nurse, it is necessary for me to have effective cross-cultural communication skills and critical thinking skills. I have been hired by a family member of Ammy for treatment of her condition of neurotoxicity. I have identified that Methylene blue is responsible for the reduction of the synthesis of guanylate cyclase along with the reduction of the inhibitor of nitric oxide synthase. Hypoxia and hyperdynamic conditions are also treated with the help of such a treatment process. I have identified my skill gap in such aspects that need to be improved in future. I need improvement in cross-cultural management skill along with critical problem-solving knowledge. The poor solving skill also hinders me from confirming the toxicity before going to be a doctor. Though I am not a doctor, there was still a lack of confidence in some areas that hinder me from taking effective care of that patient. I need improvement in my time management skill so that from next time I can be aware of immediately resulting in any irregular behaviour of patients taking drugs for management of different forms of cancers. I have also applied methylene blue on Ammy as per the direction of the doctor that helps in reducing the chloroacetaldehyde formation from the breakdown of the ifosfamide.

## Conclusion

From the overall discussion, it is concluded that management of ifosfamide-induced neurotoxicity is really a difficult task. I was also feeling happy when I applied methylene blue on Ammy as per the direction of the doctor. It helps to reduce toxicity by reducing the chloroacetaldehyde formation from the breakdown of the ifosfamide. I have been hired by a family member of Ammy for treatment of her condition of neurotoxicity. I have identified that methylene blue is responsible for the reduction of the synthesis of guanylate cyclase along with the reduction of the inhibitor of nitric oxide synthase. Hypoxia and hyperdynamic conditions are also treated with the help of such a treatment process. I was responsible for taking care of the Ammy reduction, the administration of the methylene blue and oxygen therapy. I have effective critical thinking skill and nursing knowledge that have helped me to identify the best-suited way to manage the toxicity. I have also identified in the overall experience that I need to improve my knowledge about the particular form of treatment of the ifosfamide-induced neurotoxicity in future as well.

## Action plan

Based on the overall discussion, I have Identified certain areas of improvement so that it can help me in the future to become a successful health care professional as well. As a chemotherapy nurse, it is my duty to know all aspects of the management of patients faced with neurotoxicity. Based on the ae that I need improvement areas are as follows:

|  |  |  |
| --- | --- | --- |
| **Objectives for improvement** | **Activities** | **Time required** |
| Improvement of knowledge about the neurotoxicity management | I need to research more numbers of journal articles and books so that the proper way issue of ifosfamide-induced neurotoxicity can be better understood. | 1 to 2 months |
| Improvement in cross-cultural communication skill | I need to read books and journal articles regarding the importance of cross-cultural communication in management for patients with Ifosfamide-induced Neurotoxicity. Reading recent news articles and books can also help me to understand the aspect of the | 2 to 4 months |
| Improvement of the critical thinking skill | Improvement in critical thinking skills would help me in understanding the needs and future demand of patients suffering from the Ifosfamide-induced Neurotoxicity. I have to think in a wry manner so that I can improve my creativity towards the management of patient | 4 to 6 months |
| Need to improvement analytical skill | I need to improve my creativity in identifying any previous medical history of patients suffering from the Ifosfamide-induced Neurotoxicity. It would also help me to plan out the best-suited strategy to manage the Ifosfamide-induced Neurotoxicity even in future. | 6 to 8 months |

**Table 1: Action plan care of a patient with ifosfamide-induced neurotoxicity**

(Source: Developed by author)

# Conclusion

There are various approaches used by me to manage the patient suffering from Ifosfamide-induced Neurotoxicity. Ammy was a 55 years old woman suffering from Ifosfamide-induced Neurotoxicity due to long term use of the Ifosfamide. Methylene blue is the most important drug that is used in the treatment of diseases. It helps in decreasing C-GMP and vascular smooth muscle relaxation. I was responsible for the introduction of oxygen therapy to make the nerve cell activity in the CNS system of Ammy. Though I was effective in managing and handling the issues of Ammy, I still lack cross-cultural communication skill, critical analytical skill and knowledge regarding the management of ifosfamide-induced neurotoxicity. Hence, I need improvement in all areas so that I can become a successful chemotherapy nurse in future.

# Reference list

Atchison, K.A., Rozier, R.G. and Weintraub, J.A., (2018). Integration of oral health and primary care: communication, coordination and referral. *NAM Perspectives*.

Betancourt, J.R., Green, A.R. and Carrillo, J.E., (2019). Cross-cultural care and communication. *UpToDate, Waltham, MA Accessed*, *7*.

Bhurtel, S., Katila, N., Neupane, S., Srivastav, S., Park, P.H. and Choi, D.Y., (2018). Methylene blue protects dopaminergic neurons against MPTP‐induced neurotoxicity by upregulating brain‐derived neurotrophic factor. Annals of the New York Academy of Sciences, 1431(1), pp.58-71.

Çelik, H., Kucukler, S., Çomaklı, S., Özdemir, S., Caglayan, C., Yardım, A. and Kandemir, F.M., (2020). Morin attenuates ifosfamide-induced neurotoxicity in rats via suppression of oxidative stress, neuroinflammation and neuronal apoptosis. *Neurotoxicology*, *76*, pp.126-137.

Lentz, K.L., Clark, S.M., Ayarza, M., Liu, B., Morgan, K.P., Wind, L.S. and Hairston, A., (2020). Evaluation of thiamine for the prevention of ifosfamide-induced encephalopathy. *Journal of Oncology Pharmacy Practice*, *26*(2), pp.406-412.

Li, Y., Chen, W., Liu, C. and Deng, M., (2020). Nurses’ Psychological Feelings About the Application of Gibbs Reflective Cycle of Adverse Events. *American Journal of Nursing*, *9*(2), pp.74-78.

Riedel, R.F., Jones, R.L., Italiano, A., Bohac, C., Thompson, J.C., Mueller, K., Khan, Z., Pollack, S.M. and Van Tine, B.A., (2018). *Systemic anti-cancer therapy in synovial sarcoma: a systematic review. Cancers*, 10(11), p.417.

Sharples, J.M., Oxman, A.D., Mahtani, K.R., Chalmers, I., Oliver, S., Collins, K., Austvoll-Dahlgren, A. and Hoffmann, T., (2017). Critical thinking in healthcare and education. *Bmj*, *357*.

Snyder, M., Gangadhara, S., Brohl, A.S., Ludlow, S. and Nanjappa, S., (2017). Serotonin syndrome complicating treatment of ifosfamide neurotoxicity with methylene blue. *Cancer Control*, *24*(5), p.1073274817729070.

Yeager, J. and Basnet, A., (2020). Delayed Ifosfamide Neurotoxicity. *American Journal of Therapeutics*, *27*(6), pp.e613-e614.