Acute Oncology Service in Nepal: Current Status and Future Directions

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Abstract

Cancer care in Nepal has witnessed a significant advancements, yet the management of oncological emergencies remains to have a critical gap. Acute Oncology Service (AOS) plays a pivotal role in ensuring timely interventions for patients facing cancer-related complications. This report highlights the current status of cancer care in Nepal, the urgent need for a structured AOS, and insights from the 4th BPKMCHCON conference, which focused on the establishment and expansion of AOS nationwide. The conference brought together national and international experts to discuss the integration of AOS, best practices, and sustainable strategies. The recommendations emphasize multidisciplinary collaboration, structured care pathways, and the necessity of nationwide implementation.

Keywords: Acute oncology service, Cancer care, Oncological emergencies, Nepal, Multidisciplinary approach, Health system strengthening

Introduction

Cancer remains a major public health challenge in Nepal, with approximately 22,008 new cases diagnosed annually and around 14,704 cancer-related deaths.[1,2,3] The five most frequent cancers in Nepal include lung cancer, breast cancer, cervical cancer, stomach cancer, and colorectal cancer.[2] The overall risk of developing cancer before the age of 75 is 8.7%, while the risk of dying from cancer before 75 is 6.1%.[2] The five-year cancer prevalence in Nepal is estimated at 44,803 cases.[2] The burden of cancer care is shared by both government and private institutions, which provide specialized oncology services across the country.[4]

Currently, Nepal has eleven comprehensive cancer centers. Government-funded cancer hospitals include B. P. Koirala Memorial Cancer Hospital (BPKMCH) in Bharatpur, Bhaktapur Cancer Hospital (BCH) in Bhaktapur, and Sushil Koirala Prakhar Cancer Hospital (SKPCH) in Banke. In addition, hospitals such as Bir Hospital and Civil Service Hospital have dedicated oncology units to support cancer treatment. The private sector plays a crucial role in enhancing cancer care, with leading institutions such as Nepal Cancer Hospital and Research Centre, Kathmandu Cancer Centre, Purbanchal Cancer Hospital, Chitwan Cancer Institute, Birat Cancer Institute, and Nobel Medical College providing specialized oncology services.

Despite these advancements, the centralized nature of cancer care limits access for many patients, particularly those in remote areas.[4]

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Oncological emergencies arise due to late cancer presentation, complications from cancer treatments, or disease progression, often requiring immediate intervention. These emergencies, including febrile neutropenia, metastatic spinal cord compression, and superior vena cava obstruction, significantly impact patient outcomes and necessitate a well-coordinated acute oncology service. Without a structured response system, patients may face delayed care, leading to increased morbidity and mortality.[5] Studies suggest that up to 80% of cancer patients experience oncological emergencies during their treatment journey,[6,7,8,9] yet Nepal lacks a dedicated and structured Acute Oncology Service (AOS) to address these urgent needs. Most hospitals have emergency units that manage cancer-related complications, but without a standardized AOS framework, patients often face delays in receiving timely and specialized care. Establishing AOS in Nepal is imperative to bridging this critical gap and ensuring equitable access to emergency oncology care nationwide.

The need for acute oncology service in Nepal

AOS is a specialized healthcare service that provides rapid assessment and management of oncological emergencies, complications from cancer treatments, and new cancer diagnoses.[10,11] Implemented successfully in the UK and the US, AOS has proven to improve patient outcomes, reduce hospital admissions, and enhance efficiency in cancer care.[12,13,14] Despite its global success, Nepal has yet to develop a structured AOS program, leaving many patients vulnerable to inadequate emergency care.

The introduction of AOS in Nepal is crucial for reducing treatment delays and enhancing patient outcomes, minimizing avoidable emergency room visits and hospitalizations, ensuring standardized oncological emergency care nationwide, and providing a multidisciplinary approach to patient management.

Initiation of AOS in Nepal: Insights from the 4th BPKMCHCON Conference

Recognizing the need for AOS, BPKMCH, in collaboration with QiMET International, organized the 4th BPKMCHCON conference on Acute Oncology Service. The event, coinciding with BPKMCH's 25th Annual Day and 20th Cancer Awareness Day, hosted approximately 350 participants, including national and international experts. Key sessions included 18 oral presentations and two-panel discussions on the need for AOS, challenges in implementation, and strategies for nationwide expansion.

Key takeaways from international experts

1. **Dr. Remig Wrazen (World Academy of Medical Leadership, UK)**: Emphasized the need for seamless coordination between oncology and acute care teams. He highlighted the role of leadership in integrating AOS and setting quality metrics for monitoring care.
2. **Dr. Rowena Buyan (Doncaster and Bassetlaw Teaching Hospitals, UK)**: Discussed the UK's successful AOS model, stressing that hospitals with emergency departments must integrate AOS for optimal cancer emergency care.
3. **Naomi Clatworthy (Royal Devon University Healthcare, UK)**: Advocated for AOS as an essential part of comprehensive cancer treatment and assured continued support from the UK Oncology Nursing Society (UKONS).
4. **Dr. Eliot Waterhouse (Doncaster and Bassetlaw Teaching Hospitals, UK)**: Presented evidence on how structured clinical handovers improve patient safety and team morale.

5. **Dr. Jill Aylott (QiMET International)**: Shared insights on developing AOS foundations in Nepal and assured international support for its implementation.
6. **Dr. Tobore Gbemre (NHS, UK)**: Outlined strategic planning and challenges in sustaining AOS in Nepal, stressing the importance of long-term policy and financial planning.

Panel discussions and key recommendations

Two-panel discussions were held focusing on the role of multidisciplinary teams in AOS and the expansion of AOS in Nepal. Experts emphasized the necessity of collaboration among oncologists, emergency physicians, and nursing teams to ensure the efficient functioning of AOS. Additionally, discussions highlighted the importance of capacity building, resource mobilization, and policy advocacy for nationwide implementation.

The recommendations from the conference underscored the need to formalize AOS in Nepal through structured protocols and standard operating procedures. Experts highlighted the importance of expanding AOS beyond inpatient care to primary and community healthcare settings to improve accessibility. Capacity building was recognized as a crucial aspect, necessitating the training of healthcare professionals in oncological emergency management. Establishing strong networks and collaborations with national and international stakeholders was seen as essential for ensuring the sustainability of AOS. Furthermore, integrating AOS with the broader emergency and urgent care systems was recommended to provide 24/7 access to specialized oncological emergency care. The conference concluded with the consensus that BPKMCH should take the lead in implementing and expanding AOS nationwide, fostering interdisciplinary collaboration, and ensuring long-term sustainability through continuous evaluation and improvement.

Discussion

The introduction of AOS in Nepal presents both challenges and opportunities. While the lack of structured emergency oncology services remains a critical gap, the insights gained from international models offer a roadmap for development. Countries like the UK have successfully integrated AOS, leading to improved patient outcomes, reduced hospital stays, and better management of oncological emergencies. Nepal can adopt similar frameworks by establishing national guidelines, training healthcare professionals, and ensuring collaboration between oncology and emergency medicine teams.

However, key challenges persist, including limited healthcare infrastructure, lack of trained personnel, and the financial burden of implementing AOS nationwide.[4,15] Addressing these challenges requires policy-level commitment, resource allocation, and engagement with international partners to facilitate knowledge exchange and capacity building. The discussions at the 4th BPKMCHCON conference provided a strong foundation for moving forward, emphasizing the necessity of a multidisciplinary approach and sustainable implementation strategies.

Conclusion

The establishment of AOS in Nepal is essential to bridging the gap in emergency oncological care. The 4th BPKMCHCON conference provided a vital platform to initiate discussions, build collaborations, and outline strategic steps for implementation. Moving forward, BPKMCH must take the lead in developing AOS nationwide, fostering interdisciplinary collaboration, and

ensuring sustainable healthcare solutions for cancer patients facing emergencies.

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Conflict of Interest

The authors declare no conflict of interest.

References

1. Ferlay, J., Colombet, M., Soerjomataram, I., Parkin, D. M., Piñeros, M., Znaor, A., & Bray, F. (2021). Cancer statistics for the year 2020: An overview. *Int J Cancer*. https://doi.org/10.1002/ijc.33588
2. Ferlay, J., Ervik, M., Lam, F., Colombet, M., Mery, L., Piñeros, M., Znaor, A., Soerjomataram, I., & Bray, F. (2024). *Global cancer observatory: cancer today*. Retrieved March 6 from https://gco.iarc.who.int/media/globocan/factsheets/populations/524-nepal-fact-sheet.pdf
3. Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin*, *71*(3), 209-249. https://doi.org/10.3322/caac.21660
4. Gyawali, B., Sharma, S., Shilpakar, R., Dulal, S., Pariyar, J., Booth, C. M., & Sharma Poudyal, B. (2020). Overview of Delivery of Cancer Care in Nepal: Current Status and Future Priorities. *JCO Global Oncology*(6), 1211-1217. https://doi.org/10.1200/GO.20.00287
5. Marshall, E., Patel, N., & Selvaratnam, R. (2023). Oncological emergencies. *Medicine*, *51*(1), 80-85. https://doi.org/https://doi.org/10.1016/j.mpmed.2022.10.015
6. Gould Rothberg, B. E., Quest, T. E., Yeung, S.-C. J., Pelosof, L. C., Gerber, D. E., Seltzer, J. A., Bischof, J. J., Thomas Jr, C. R., Akhter, N., Mamtani, M., Stutman, R. E., Baugh, C. W., Anantharaman, V., Pettit, N. R., Klotz, A. D., Gibbs, M. A., & Kyriacou, D. N. (2022). Oncologic emergencies and urgencies: A comprehensive review. *CA: A Cancer Journal for Clinicians*, *72*(6), 570-593. https://doi.org/https://doi.org/10.3322/caac.21727
7. Melendez, E., & Harper, M. B. (2010). Risk of serious bacterial infection in isolated and unsuspected neutropenia. *Academic Emergency Medicine*, *17*(2), 163-167.
8. Wisplinghoff, H., Seifert, H., Wenzel, R. P., & Edmond, M. B. (2003). Current trends in the epidemiology of nosocomial bloodstream infections in patients with hematological malignancies and solid neoplasms in hospitals in the United States. *Clinical Infectious Diseases*, *36*(9), 1103-1110.
9. Zinner, S. H. (1999). Changing epidemiology of infections in patients with neutropenia and cancer: emphasis on gram-positive and resistant bacteria. *Clinical Infectious Diseases*, *29*(3), 490-494.
10. Gilligan, D. (2014). Acute oncology: a bona fide subspecialty or a distraction from the day job? *Clinical Oncology*, *26*(3), 128-129.
11. Shankland, K., Kirkbride, P., Bourke, A.-M., Price, J., Walkington, L., & Danson, S. (2012). The Acute Oncologist's Role in Managing Patients with Cancer and other Comorbidities. *Journal of Comorbidity*, *2*(1), 10-17. https://doi.org/10.15256/joc.2012.2.8
12. Handley, N. R., Schuchter, L. M., & Bekelman, J. E. (2018). Best Practices for Reducing Unplanned Acute Care for Patients With Cancer. *J Oncol Pract*, *14*(5), 306-313. https://doi.org/10.1200/jop.17.00081
13. Kulkarni, S., Knight, T., Cooksley, T., Marshall, E., Patel, N., Selvaratnam, R., & Atkin, C. (2023). Provision of acute oncology services in the UK: data from the Society for Acute Medicine Benchmarking Audit 2022 (SAMBA22). *Clin Med (Lond)*, *23*(6), 571-581. https://doi.org/10.7861/clinmed.2023-0251
14. Neville-Webbe, H. L., Carser, J. E., Wong, H., Andrews, J., Poulter, T., Smith, R., & Marshall, E. (2013). The impact of a new acute oncology service in acute hospitals: experience from the Clatterbridge Cancer Centre and Merseyside and Cheshire Cancer Network. *Clin Med (Lond)*, *13*(6), 565-569. https://doi.org/10.7861/clinmedicine.13-6-565
15. Shrestha, S., Gan, S. H., Paudyal, V., Kc, B., & Sapkota, S. (2023). Current practices, gaps, and opportunities on the role of clinical pharmacists in cancer pain management: Perspectives from Nepal. *Journal of Oncology Pharmacy Practice*, *29*(8), 2049-2056. https://doi.org/10.1177/10781552231205025