

General practitioners practicing anesthesia care in rural Nepal – rewards and challenges

Binod Dangal¹, Kashim Shah², Rakshya Dhungana³, Aayush Neupane⁴

¹Senior Clinical Coordinator (NSI), ³MDGP Consultant, ⁴Medical Officer, Pashupati Chaulagain Memorial Hospital, Charikot, Dolakha, Nepal; ²MDGP, Senior Program Manager, Nick Simons Institute (NSI), Lalitpur, Nepal

ABSTRACT

Safe and accessible anesthetic care is critically limited in Asian countries. Perioperative anesthesia related complications are higher in resource limited countries. Neuraxial regional anesthesia is becoming popular and considered as anesthesia of choice in surgeries below umbilicus due to its safety, accessibility, efficacy and low cost. Due to limited numbers of anesthetists and anesthesia assistants, Medical Doctorate in General Practice (MPGP) are widely practicing different types of anesthetic care and performing varieties of surgeries in remote Nepal. Effective coordination, task sharing approach, clinical updates and specific training programs are required to strengthen anesthetic care of general practitioners in rural Nepal.

Keywords: Lower resource countries, medical doctorate in general practice (MDGP), regional anesthesia, rural Nepal.

CORRESPONDENCE

Dr. Binod Dangal

Senior Clinical Coordinator, Pashupati Chaulagain Memorial Hospital, Charikot, Dolakha, Nepal

Email: binod.dangal999@gmail.com

INTRODUCTION

Safe and accessible anesthetic care is critically limited in low-resource countries.¹ Almost 4.8 billion people worldwide were found to have critical lack of access to safe and affordable anesthetic care in low-resource countries.² Inadequacy of resources, less trained man power, lack of equipment, inadequate drugs and poor adaptive leadership are the key factors in low resource countries to fulfill anesthetic need of the health facility.³

With around 200 anesthetists, anesthesia services are limited to major cities in Nepal and to fill the gap in district hospitals, anesthesia assistants with registered nurse and health assistant qualifications were trained in few decades.⁴ Anesthesia assistant is a 12-month training program aims strategic placement at rural hospitals after a robust, competency based and context specific curriculum.

Medical Doctorate in General Practice (MDGP) residency is a 3 –year structured program in Nepal and the major subjects of the training includes internal medicine, general surgery, pediatrics, gynecology and obstetrics, psychiatry, anesthesia and others.⁵ For MDGPs, anesthesia is a 3 months structured program and training includes neuraxial regional anesthesia, intravenous anesthesia, general anesthesia, and local anesthesia. This study highlights the role of MDGPs in anesthesia care at Pashupati Chaulagain Memorial Hospital (PCMH- a hospital supported by Nick Simons Institute- a non-governmental philanthropic

organization whose aim is to enhance the rural healthcare services, based in Nepal), Dolakha.

Rewards of aesthesia care by MDGPs

Anesthesia care by MDGPs at PCMH

From 2021 July to June 2022, 658 anesthetic procedures were done and 356(54%) cases underwent subarachnoid block, 211 (32%) cases underwent intravenous anesthesia, 89 cases (14%) underwent peripheral nerve block and 2(0.3%) underwent general anesthesia, shown in graph 1 and table 1, mostly performing caesarian sections, hernia repair, appendectomy, fracture management and hysterectomy.

Task shifting of anesthesia care

MDGPs are guiding and training medical officers and mid-level practitioners with structured curriculum based continuing medical education (CMEs). It includes structured classes and hands on practices on spinal anesthesia, intravenous anesthesia and peripheral nerve blocks. One of the study done at the same hospital shows that 67 subarachnoid block were handled by medical officers and mid-level practitioners successfully under the supervision of MDGPs.⁶

Safety ad cost effectiveness

Anesthesia care provided by MDGPs at PCMH has fewer minor complications only. After each procedure, patients were fully awake and were discharged safely. Overall cost in anesthesia care has been reduced significantly. Safe anesthesia outcomes, after anesthesia administration by trained non-anesthesia staff have been reported in several studies.^{7, 8}

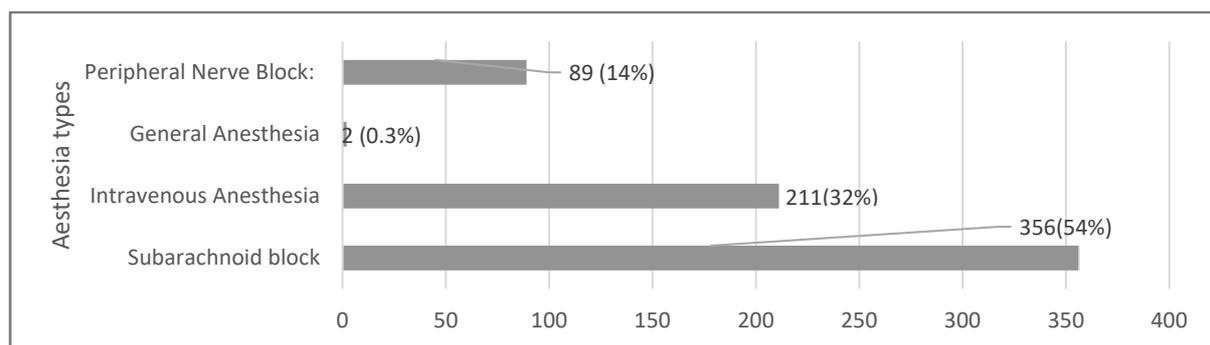


Figure 1. Types of anesthesia care given by MDGPs at PCMH

Table 1. Types of anesthesia care and surgical procedure

Types of anesthesia care	Surgical procedure
Subarachnoid block	Caesarian section, appendectomy, mesh repair for hernia, eversion of sac for hydrocele, hemorrhoidectomy, perianal fistulectomy, and hysterectomy, plating and tension band wiring for lower limbs fractures.
General Anesthesia	Duodenal ulcer perforation
Intravenous anesthesia	Incision and drainage, fracture reduction, K-wire fixation.
Peripheral Nerve Block	Fracture reductions, plating, K-wire fixation, tendon repair,

Challenges

Inadequate numbers of anesthesia providers and their retention in the major cities remains the major challenge for adequate safe anesthesia care in remote Nepal. A lack of opportunities to advance skills is another factor to upgrade recent updates. Less availability of anesthesia providers in rural setting, lack of motivation, low salary scales, lack of accreditation systems for mid-level providers, less availability of drugs and equipment for anesthesia care, lack of proper infrastructure set up Intensive care units, supervision and mentoring of skills are the barriers to safe anesthesia practices in remote Nepal. Even though, MDGPs are occupied with other key responsibilities in district hospitals, they are facilitating anesthesia care and performing major life saving surgeries.

Recommendations

The crisis in human resources for anesthesia care in many low-resource countries is contributed to by the low standing that the profession has, especially in Asia and the resulting problems with recruitment and retention of practitioners at all levels. Encouraging a change of attitude towards the anesthesia profession is a complex problem that will take a multipronged approach and time. Effective coordination, task sharing approach, clinical updates and specific training programs on safe anesthetic procedures, expanding and increasing Medical Doctorate Anesthesia degree and anesthesia assistant seats from ministry of health, internal and external motivation of the staffs, creating environment for anesthesia specialists to work in remotes setting, and creating coordination and collaboration platform with anesthesia specialists, and partnering with other non-governmental bodies to promote academic anesthesia training programs remain the key recommendations to improve anesthesia care in Nepal.

Given the magnitude of the shortage of anesthesia care providers, anesthesiologists need to take a lead role in the development of trained paramedical workforce with quality and structured comprehensive anesthesia care package for MDGPs during residency with proper recognition by government with accreditation.

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