OPEN ACCESS Freely available online
http://www.banglajol.info/index.php/BJID/index
Perspective
Bangladesh Journal of Infectious Diseases
December 2024, Volume 11, Number 2, Page 235-236
ISSN (Online) 2411-670X
ISSN (Print) 2411-4820
DOI: https://doi.org/10.3329/bjid.v11i2.79739

Infection Rate in Laparoscopic Surgery in Low-Resource Facilities in Bangladesh

Pankaj Kumar Saha

Senior Consultant, Department of General, Laparoscopic & Bariatric Surgery, Evercare Hospital Dhaka, Dhaka, Bangladesh

Laparoscopic surgery, also known as minimally invasive surgery (MIS), has revolutionized surgical practices by reducing postoperative pain, shortening hospital stays, and minimizing surgical site infections (SSIs). However, in low-resource settings such as many healthcare facilities in Bangladesh, ensuring infection control in laparoscopic procedures remains a significant challenge. This commentary aims to explore the factors influencing infection rates in laparoscopic surgery within these settings and suggest measures for improvement.

Challenges Contributing to Infection Rates

Despite the advantages of laparoscopic surgery, low-resource healthcare facilities in Bangladesh face several barriers that contribute to higher infection rates:

Limited Sterilization Protocols: Proper sterilization of surgical instruments, especially laparoscopic equipment, requires adherence to strict protocols. Many facilities struggle with inadequate sterilization due to limited access to autoclaves, ethylene oxide sterilization, or other advanced sterilization methods.

Suboptimal Infection Control Practices: Hand hygiene compliance, proper use of personal protective equipment (PPE), and maintenance of aseptic techniques are critical in reducing SSIs. However, resource constraints, insufficient training, and poor compliance with infection prevention guidelines compromise infection control.

Lack of Standardized Operating Theaters: Many low-resource facilities lack designated laparoscopic surgical suites, increasing the risk of cross-contamination. Overcrowding, improper ventilation, and poor maintenance of surgical environments further contribute to infection risks.

Limited Access to Disposable Instruments and Supplies: The reuse of surgical instruments due to financial constraints can lead to increased infection risks if sterilization is inadequate. Additionally, limited availability of disposable trocars, insufflation tubing, and sterile drapes adds to the burden.

Antimicrobial Resistance (AMR): The misuse or overuse of antibiotics in low-resource settings has led to an increase in antimicrobial-resistant pathogens, complicating postoperative infection management. The lack of microbial surveillance further exacerbates the problem.

Potential Solutions and Recommendations

Moving forward, further research and policy support will be crucial in establishing sustainable infection control practices in laparoscopic surgery across Bangladesh's healthcare system. To mitigate the infection rate in laparoscopic surgeries within low-resource facilities in Bangladesh, a multifaceted approach is required:

Enhancing Sterilization Standards: Investing in cost-effective yet efficient sterilization technologies, such as high-level disinfection with peracetic acid or hydrogen peroxide plasma, could be beneficial. Strict adherence to sterilization protocols must be enforced through routine monitoring.

Improving Training and Compliance: Continuous education programs on infection control and laparoscopic surgical techniques should be mandatory for surgeons, nurses, and support staff. Simulation-based training can enhance adherence to aseptic practices.

Upgrading Infrastructure: Basic improvements in operating room ventilation, designated laparoscopic theaters, and improved waste disposal systems can help reduce infection risks. Partnerships with non-governmental organizations (NGOs) and public-private collaborations could support such infrastructure developments.

Promoting Proper Antibiotic Stewardship: Establishing antibiotic guidelines based on local microbiological data can reduce the misuse of antibiotics. Preoperative prophylaxis should be rationalized to avoid unnecessary exposure and prevent AMR.

Ensuring Availability of Essential Supplies: Government intervention and collaborations with healthcare suppliers should focus on providing cost-effective disposable surgical instruments and consumables to reduce infection transmission risks.

Conclusion

The infection rate in laparoscopic surgery in low-resource healthcare settings in Bangladesh remains a pressing concern. Addressing this issue requires a combination of improved sterilization practices, infrastructure upgrades, enhanced training, and proper antimicrobial stewardship. By implementing targeted interventions, healthcare facilities can improve surgical outcomes, reduce SSIs, and enhance overall patient safety.

Correspondence: Prof. Dr. Pankaj Kumar Saha, *MBBS, MS, FRCS, FACS*, Senior Consultant, Department of General, Laparoscopic & Bariatric Surgery, Evercare Hospital Dhaka, Dhaka-1207, Bangladesh and Former Head & Professor of Surgery, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; **Cell No.:** 01711153 692; **Email:** pksaha2@yahoo.com; pksaha22@gmail.com; pankaj.kumar@evercarebd.com; **ORCID:** https://orcid.org/0009-0004-3128-0911

Bangladesh Journal of Infectious Diseases, December 2024;11(2):235-236