# FEATURES OF THE USE OF ANTISEPTIC AND DISINFECTANT AGENTS IN NEWBORNS

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**Annotation:**This paper examines the characteristics of using antiseptic and disinfectant agents in newborns and their importance in neonatal healthcare. Newborns are highly susceptible to infections due to the immaturity of their immune system and the specific features of neonatal skin and mucous membranes. The study discusses the classification, mechanisms of action, indications, methods of application, advantages, and potential adverse effects of commonly used antiseptic and disinfectant agents. Particular attention is given to infection prevention, skin care, umbilical cord management, environmental disinfection, and the prevention of healthcare-associated infections. The paper also highlights the role of nurses in the proper selection, administration, monitoring, and safe use of these agents. Understanding the principles of antisepsis and disinfection is essential for ensuring patient safety, reducing infection risks, and improving the quality of neonatal care.

**Keywords;** Newborns; Neonatal care; Antiseptic agents; Disinfectant agents; Infection prevention; Neonatal infections; Skin antisepsis; Umbilical cord care; Patient safety; Healthcare-associated infections; Nursing practice; Infection control; Neonatal nursing; Aseptic techniques; Hygiene.

Newborns represent one of the most vulnerable groups of patients in healthcare due to the immaturity of their immune system and the physiological characteristics of their skin and mucous membranes. During the neonatal period, infants are highly susceptible to infections caused by bacteria, viruses, fungi, and other microorganisms. Therefore, the prevention of infectious diseases is a major priority in neonatal care. Antiseptic and disinfectant agents play a crucial role in maintaining hygiene, preventing infections, and ensuring the safety of newborns in both hospital and home environments.

Antiseptics are chemical substances applied to living tissues, such as the skin and mucous membranes, to inhibit or destroy microorganisms. Disinfectants, on the other hand, are chemical agents used on inanimate objects and surfaces to eliminate pathogenic microorganisms and reduce the risk of infection transmission. Both groups of agents are essential components of infection prevention and control programs in neonatal healthcare settings.

The use of antiseptic and disinfectant agents in newborns requires special consideration because neonatal skin is thinner, more permeable, and more sensitive than adult skin. As a result, certain substances may be absorbed more readily into the bloodstream, increasing the risk of toxicity and adverse reactions. In addition, newborns

have immature liver and kidney functions, which may limit their ability to metabolize and eliminate chemical agents effectively. Therefore, the selection and application of antiseptic and disinfectant products must be based on safety, efficacy, and age-specific recommendations.

Various antiseptic agents, including chlorhexidine, povidone-iodine, hydrogen peroxide, and alcohol-based solutions, are commonly used in neonatal practice. These substances are applied for umbilical cord care, skin preparation before invasive procedures, wound management, and infection prevention. However, their use must be carefully monitored to avoid complications such as skin irritation, allergic reactions, chemical burns, and systemic toxicity.

Disinfectants are widely used in neonatal units to maintain a safe environment by reducing microbial contamination on medical equipment, incubators, beds, instruments, and healthcare surfaces. Proper disinfection procedures are essential for preventing healthcare-associated infections, which remain a significant cause of morbidity and mortality among newborns. Effective infection control practices require adherence to established protocols and guidelines regarding the preparation, concentration, application, and storage of disinfectant agents.

Nurses play a key role in the proper use of antiseptic and disinfectant agents in neonatal care. Their responsibilities include selecting appropriate products, ensuring correct application techniques, monitoring newborns for adverse reactions, maintaining aseptic conditions, and educating parents about infection prevention measures. Through these activities, nurses contribute significantly to improving patient safety and reducing the incidence of neonatal infections.

The relevance of studying the use of antiseptic and disinfectant agents in newborns is associated with the continuing need to prevent infections while minimizing potential risks related to chemical exposure. Understanding the characteristics, indications, advantages, and limitations of these agents is essential for providing safe and effective neonatal care.

The aim of this study is to examine the characteristics and practical application of antiseptic and disinfectant agents in newborns and to evaluate their importance in infection prevention and neonatal healthcare practice.

Antiseptic and disinfectant agents are indispensable components of modern neonatal healthcare. Their appropriate use contributes significantly to the prevention of infections, protection of newborn health, and reduction of healthcare-associated complications. Due to the increased susceptibility of newborns to infectious diseases, effective infection control measures remain a critical aspect of neonatal care.

The study demonstrates that antiseptics and disinfectants serve different but complementary functions in infection prevention. Antiseptics are used directly on living tissues to reduce microbial growth, while disinfectants are applied to environmental surfaces and medical equipment to eliminate pathogenic microorganisms. Together, they create a safer environment for newborns and healthcare providers.

The unique physiological characteristics of newborns require careful selection and application of these agents. Neonatal skin and organ systems are highly sensitive to chemical exposure, making it essential to use products that are both effective and safe. Healthcare professionals must consider the concentration, duration of exposure, and potential adverse effects of each agent before use.

The findings also emphasize the importance of adhering to infection control guidelines and evidence-based practices. Proper hand hygiene, skin antisepsis, equipment disinfection, and environmental cleaning significantly reduce the risk of infection transmission in neonatal units. Failure to follow these measures may increase the likelihood of healthcare-associated infections and negatively affect patient outcomes.

Nurses have a particularly important role in ensuring the safe use of antiseptic and disinfectant agents. Through accurate application, continuous monitoring, patient assessment, and parental education, nurses contribute to maintaining high standards of neonatal care and patient safety. Their professional knowledge and skills are essential for preventing complications and promoting positive health outcomes.

In conclusion, the use of antiseptic and disinfectant agents in newborns is a vital component of infection prevention and neonatal healthcare practice. Appropriate selection, careful administration, and continuous monitoring of these agents help protect newborns from infectious diseases while minimizing potential risks associated with chemical exposure. Strengthening healthcare professionals' knowledge and adherence to infection control protocols will further improve the quality and safety of neonatal care.

## REFERENCES:

1. Hockenberry, M. J., & Wilson, D. (2023). *Wong's Nursing Care of Infants and Children* (13th ed.). St. Louis: Elsevier.
2. Cloherty, J. P., Eichenwald, E. C., Hansen, A. R., & Stark, A. R. (2024). *Manual of Neonatal Care* (9th ed.). Philadelphia: Wolters Kluwer.
3. Kliegman, R. M., St. Geme, J. W., Blum, N. J., Shah, S. S., & Tasker, R. C. (2024). *Nelson Textbook of Pediatrics* (22nd ed.). Philadelphia: Elsevier.
4. World Health Organization (WHO). (2025). *Recommendations on Newborn Health: Guidelines for Essential Newborn Care*. Geneva: WHO.
5. World Health Organization (WHO). (2024). *Guidelines on Hand Hygiene and Infection Prevention in Health Care*. Geneva: WHO.
6. Centers for Disease Control and Prevention (CDC). (2025). *Guideline for Disinfection and Sterilization in Healthcare Facilities*. Atlanta, GA: CDC.
7. Perry, A. G., Potter, P. A., & Ostendorf, W. R. (2023). *Clinical Nursing Skills and Techniques* (10th ed.). St. Louis: Elsevier.
8. Berman, A., Snyder, S., & Frandsen, G. (2023). *Kozier & Erb's Fundamentals of Nursing* (12th ed.). Boston: Pearson Education.
9. Hinkle, J. L., & Cheever, K. H. (2024). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing* (16th ed.). Philadelphia: Wolters Kluwer.

10. European Centre for Disease Prevention and Control (ECDC). (2024). *Infection Prevention and Control in Neonatal and Pediatric Healthcare Settings*. Stockholm: ECDC.