Review Article

Nosocomial infections in public sector hospitals: urgent need for structured and coherent approach to the problem.

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ABSTRACT
Nosocomial infections are an important cause of preventable morbidity and mortality. This paper highlights some of the serious but avoidable aspects of this largely ignored but vital issue of nosocomial infections in public sector hospitals of Pakistan. This paper also aims to alert the health policy makers, medical staff, microbiologists and other experts to consider more clearly the serious threat of nosocomial infections. It may help Pakistan Ministry of Health to become actively involved in the development of a structured and coherent approach to the problem. (Rawal Med J 2006;31:81-84)

KEY WORDS: Nosocomial infections, Disease transmission, Patient-to-Professional Professional-to-Patient, Surveillance, Infection control
SCOPE OF THE PROBLEM

Nosocomial Infections or hospital-acquired infections are a serious problem in public sector hospitals of developing countries such as Pakistan where there are no well-defined guidelines for hospital infection control and prevention. Public sector hospitals of both large and small cities of Pakistan are facing multifaceted problems due to rampant nosocomial infections and the emergence of multi-drug-resistant bacteria. If unchecked, these preventable and avoidable infections not only add to the suffering of patients but are also a considerable economic burden. Little literature is available on hospital acquired infections in Pakistan and related issues such as frequent occurrence of multi-resistant bacteria, and the economic loss and suffering of individuals, who bear the high health care costs.

In many countries, strict guidelines and policies for control, prevention, and management of nosocomial infections are implemented but even then hospital infections do occur in one form or another. In the public sector hospitals of Pakistan, there is a lack of awareness and education in hospital acquired infections. However, other social, ethical and economic factors also need to be considered in the control of these infections. There are numerous of groups worldwide, either sponsored by governments or pharmaceutical companies, which are involved in research on nosocomial infections. These teams have voiced their concerns and identified the prevailing microorganisms and other reasons why they are serious threats to the hospital environment resulting nosocomial infections. According to their findings, nosocomial infections can be drastically reduced if strict guidelines are followed. Such teams from many countries of the world have strongly emphasized the importance of nosocomial infections and their focus has been on the
microbiology of the problem. These topics have included vancomycin-resistant
*Enterococcus faeicum*,¹ Methicillin–resistant *Staphylococcus aureus* (MRSA),²,³ nosocomial infective endocarditis,⁴ nosocomial fungal infections,⁵ *Escherichia coli*, Klebseilla spp and Enterobacter spp,⁶ respiratory infections in hospitalized patients,⁷ and intravascular catheter-related sepsis.⁸
Apart from identifying microbes and their routes of transmission, other aspects of nosocomial infections that have been addressed include preventive practices guidelines for nosocomial infections,⁹ the role of hospital environment in infection control,¹⁰ quality circles in infection control,¹¹ management of hospital- acquired infections,¹² the interface between hospital management and microbiology,¹³ hygiene protocols in hospitals,¹⁴ and measurement of the index of microbial air contamination.¹⁵

**CONTROL OF NOSOCOMIAL INFECTIONS**

A number of factors need to be addressed, highlighted and communicated to the general population and medical staff in particular. These factors (Fig. 1) include:

**Basic Medical Education**

Basic medical knowledge is vital part of education and should be developed from the level of primary education until graduation. This should include the most important human diseases, the importance of hospitals in community and their role of controlling diseases and factors involved in transmission of disease.¹⁶ A further aim should be to develop confidence among people that hospitals are safe environments which can reduce the prevalence of disease in the community and cure the ailments for which patients were referred to hospitals.
The Prestige and Respect of Hospitals

Hospitals must be respected and considered as ‘safe places’ for patients rather than places where other diseases may be acquired, as many people believe. For this purpose, strict, easy to understood, implement able, friendly guidelines\(^9\) should be formulated and explained to the public in national and local language through newspaper, radio, television, national and local seminars with presentations and talks easily understood by lay people.

Hospital Environmental Cleaning Standards

This is an essential aspect in curbing nosocomial infections if we are to minimize the risk of acquiring infections from hospitals.\(^{17}\) Widespread concerns are raised by the citizens about the contribution of poorly cleaned hospitals to cross infection. High levels of dusting results in spread of microbes in the air of hospitals. The most commonly cited microbes are staphylococci, enterococci, Acinetobacter, and *Clostridium difficile*.\(^{10,19,20,21}\)

These and other microbes spread by dusting can be opportunistic pathogens which cause cross-infection. That is why many European hospitals allocate substantial separate funds under the head “cleaning budgets”. Hospital policy makers can learn from European countries and experts in Pakistan can formulate effective routines for hospital environmental cleaning. Also, imparting knowledge to hospital personnel about reasons for routine cleaning and decontamination of medical equipment is vitally important in reducing the nosocomial infections\(^{21,22}\) (fig. 2).
Fig: 1 Basic and important considerations in curbing hospital acquired infections

Important considerations for curbing nosocomial infections

- Visitors
- Basic Medical Education
- Hospital Environment and Cleaning Standards
- The Prestige and Respect of Hospitals
Visitors

It has been observed that for a single patient, their complete family as well as friends and other relatives will visit the patient. There is currently low awareness of the possible transmission of infections via visitor’s shoes, uncovered hands, the need to use masks, sneezing, coughing (droplets) while talking patients, using same eating utensils (plate, glass, spoon, cup, etc) while visitors are in hospitals. To develop appropriate awareness

Fig: 2 Draft guidelines on prevention of Nosocomial infections
strict regulations are needed to address the psychological and ethical misconceptions of visitors. This can be achieved by educating the general population through the medium of television, radio, and newspaper so that ordinary citizens can understand the guidelines for “safe visiting” in hospitals.

CONCLUSION

Some of the serious but avoidable aspects of this largely ignored but vital issue of nosocomial infections in Pakistan are highlighted. Misuse of antibiotics has produced antibiotic resistant organisms such as MRSA and these increase clinical complications of patients, lengthening their hospital stay and adding to treatment costs. There is no official, national approach and no real managerial support from health authorities for control of nosocomial infections. This paper aims to alert the health policy makers, medical staff, microbiologists and other experts to consider more clearly the serious threat of nosocomial infections. This is for the Pakistan Ministry of Health to become actively involved in the development of a structured and coherent approach to the problem. There is an urgent need for “active management” of antibiotic usage. Public education by popular journalism in the mass-media, by seminars, talks and presentations may be helpful in this problem.

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