

The Cheating Cheate's : How Safe They Are ? - Original Article

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Abstract: We know and speak a lot about cross infections (that is infection transmitted through the articles that are shared by people like fomites, stationeries and door knobs etc.). But as doctors we think and talk less about Hospital acquired infections for which we may also be one of the reasons. These hospital acquired infections are recognized as critical public health problems. These infections are frequently caused by those organisms present in healthcare environment, and also contaminating the medical instruments like cheatle's forceps which is used to pickup almost all of the sterile instruments that are used in day to day hospital routine.

Keywords: cheatle's forceps, cross infection.

I. Introduction

It will be very embarrassing for the doctors if we come to know that we are one of the cause for the spread of hospital acquired infection which is one of the dreaded problem as for as the inpatient population in tertiary hospitals is concerned. It is still more embarrassing if we understand that we as doctors know and speak a lot about cross infections (that is infection transmitted through the articles that are shared by people like fomites, stationeries and door knobs etc) but very less about Hospital acquired infections for which we may also be one of the reasons. These hospital acquired infections are recognized as critical public health problems. These infections are frequently caused by those organisms present in healthcare environment, and also contaminating the medical instruments like cheatle's forceps which is used to pickup almost all of the sterile instruments that are used in day to day hospital routine.

II. Background

The cheatle's forceps which is universally used as a medical equipment by health care workers to pick up the medical instruments and dressing materials, is likely to be contaminated by microorganisms. If it is not cleaned / disinfected properly may transmit pathogens from one patient to another and also contaminate entire hospital environment with a particular organism which it may carry on itself.

III. Objectives

To determine bacteriae that are contaminating the cheatle's forceps, and to survey and modify the practices of cleaning and disinfecting this forceps.

IV. Material and Methods

This prospective, cross sectional study was conducted by the Departments of surgery in various hospitals in Tamil Nadu during September 2016. Swabs for culture were taken from the tips of the cheatle's forceps that are used in all the surgical wards, surgical out patient departments, Post operative wards and dressing rooms simultaneously and the pattern of organisms were analysed.

V. Results

The results show an alarming list of organisms that are living in our hospital setup. Cultures from the general wards show coagulase negative staphylococcus, Enterococci, E.coli, Klebsiella, Pseudomonas, GNB and CONS here both the individual factor and the institutional factors play a role. is contaminated from the patients.

Where as cultures from the post op. wards show pseudomonas the pts got contaminated from the instrument (INSTITUTIONAL FACTORS). All the cultures show a significant growth,(more than a lakh colonies)

VI. Conclusion

The disinfection and sterilization of the every nook & corner of the hospitals is the need of the hour

Overview

Hospital acquired infections are a significant source of morbidity and mortality for the inpatient population in tertiary care hospitals. In US, Hospital acquired Infections result in an estimated 150,000 to 200,000 hospital admissions per year at an estimated cost of \$673 million to \$2 billion annually. As for as India is concerned routine ulcer care, treatment of infections, amputations, and hospitalizations cost a huge sum to the health care system. As on date estimates say, India is shelling out Rs 10,000 to 12,000 crore on this, which is likely to witness a scaling upto as much as Rs 1,26,000 crore by 2025 (Mohan et al, unpublished observations). The death due to hospital acquired infections is really reaching the heights. It is estimated that an average of 1.6 to 3.8 infections per patient occur annually in tertiary care hospitals. Infections of the Urinary tract, respiratory tract (e.g., pneumonia and bronchitis), and skin & soft tissues (infections of the pressure ulcers) represent the most common infections among the in patients.

Other common infections include conjunctivitis, gastroenteritis, and influenza. Confirming and managing an infectious outbreak can be costly and time consuming. An effective facility-wide infection prevention and control program can help to contain costs and reduce adverse consequences. An effective program relies upon the involvement, support, and knowledge of the facility's administration, the entire interdisciplinary team, residents, and visitors. The contamination of forceps might be the potential vectors of nosocomial infections. There is no sufficient studies conducted in this part of the country to support this. So the main aim of our study is to chart out the pattern of microbes in the medical instruments (especially cheate's forceps) of our hospitals.

Preventing The Spread Of Infection

Factors Associated with the Spread of Infection in Nursing Homes Many factors contribute to the spread and frequency of infections and infectious diseases in hospitals. These infections can be the result of individual or institutional factors, or both. Modes of transmission of infection include, but are not limited to: Contact • Droplet • Airborne.

Individual factors

Individual factors are variable and cannot be predicted or kept under control. They are influenced not only by the patient's socioeconomic and nutritional status but also by the disease they are suffering.

Institutional Factors

Institutional factors also facilitate transmission of infections among the patients, including but not limited to:

- * Pathogen exposure in shared communal living space (e.g., handrails and equipment);
- * Common air circulation;
- * Direct/indirect contact with health care personnel/visitors/other residents;
- * Direct/indirect contact with equipment used to provide care (especially cheate's foreps);
- * Transfer of patients to and from hospitals or other settings.

According to the CDC (USA) has a classification system that identifies three risk levels associated with medical and surgical instruments: critical, semi-critical and noncritical. This includes:

Critical items (e.g., needles, intravenous catheters, indwelling urinary catheters) are defined as those items which normally enter sterile tissue, or the vascular system, or through which blood flows. The equipment must be sterile when used, based on one of several accepted sterilization procedures;

Semi-critical items (e.g., thermometers, podiatry equipment, and electric razors) are defined as those objects that touch mucous membranes or skin that is not intact. Such items require meticulous cleaning followed by high-level disinfection treatment using an appropriate chemo sterilizer agent, or they may be sterilized; and

Non-critical items (e.g., stethoscopes, blood pressure cuffs, over-bed tables) are defined as those that come into contact with intact skin or do not come into contact with the patient . They require low level disinfection by cleaning periodically after a visible soiling, with an EPA disinfectant detergent or germicide that is approved for health care settings.

Medical equipments that are used in the non-critical care setting are less likely to have standard disinfection and cleaning protocols than equipments in the critical care setting. These medical care equipments are more likely to carry considerable number of pathogenic microorganisms .The contamination of the tips of the cheatle's forceps is reported mainly due to lack of regular disinfection everyday and no attempts have been made to survey, modify and document the ways and means of disinfecting or sterilizing these instruments. Here we have made an attempt to study and publish about this subject from the southern India.

The details of the questionnaires which were filled by all the HCWs revealed that 50% of them were aware that the cheatle's forceps could transmit infectious agents, while all the 100% thought that the cheatle's forceps needed to be disinfected or sterilized daily. They don't do that daily and properly. The methods and the periodicity of cleaning the stethoscopes by the HCWs are summarized in [Table/Fig-1.5 & 1.6].

Organisms isolated from cheatle's forceps from various areas			
s.no	Place of isolation	Organism isolated	CFU
1	post natal ward	Pseudomonas	$\geq 10^5$
		E.coli	$\geq 10^5$
		Enterococci	$\geq 10^5$
2	IMCU	Pseudomonas	$\geq 10^5$
		E.coli	$\geq 10^5$
		Klebsiella	$\geq 10^5$
3	500 ward	E.coli	$\geq 10^5$
4	Paediatric ward	Enterobacteriaceae	$\geq 10^5$
5	O&G ward	Pseudomonas	$\geq 10^5$
6	LSCS Post op ward	Pseudomonas	$\geq 10^5$
7	Triage ward	Enterococci	$\geq 10^5$
		Staphylococci	$\geq 10^5$
		GNB	$\geq 10^5$
8	surgery ward	Enterococci	$\geq 10^5$
		E.coli	$\geq 10^5$
		Klebsiella	$\geq 10^5$
9	surgery ward	Pseudomonas	$\geq 10^5$
10	surgery ward	Pseudomonas	$\geq 10^5$
11	surgery ward	GNB	$\geq 10^5$
		Ecoli	$\geq 10^5$
		Klebsiella	$\geq 10^5$
12	WPO		$\geq 10^5$
13	NMS	Pseudomonas	$\geq 10^5$
No growth from MOT's & EOT			

Disinfection practice

The rate of contamination of the cheatle's forceps and the colony counts were found to be inversely related to the frequency of cleaning and the cleaning procedure of the cheatle's forceps. The questionnaires which were received from the HCWs revealed that many of them had cleaned the cheatle's occasionally and that the colony counts from these cheatle's were comparatively higher than those from other forceps that are cleaned regularly and properly. (%) HCWs (Medical staffs and Residents), and (%) of medical students do not disinfect regularly.

VII. Discussion

Every one of us in the health care delivery system presume that all the instruments are disinfected or sterilized regularly and properly. But we never supervise this work which is mainly by very least intellectuals in the team. Mere immersion of the cheatle's forceps in chlorhexidine solution (The regular scenario in many of the wards)alon is not enough for disinfection And more so chlorhexidine is a culture media for pseudomonas.

VIII. Conclusion

Hence we recommend that the instruments like cheatle's forceps shold be autoclaved every day and should kept im ersed in a bottle with sterile saline solution.

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