ORIGINAL RESEARCH PAPER

Dental Science

Volume - 7 | Issue - 2 | February - 2017 | ISSN - 2249-555X | IF : 3.919 | IC Value : 79.96

A Survey to Assess the Awareness of Aseptic Handling and Transportation of Impressions

KEYWORDS: Impressions, Disinfection

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ABSTRACT In medical field cross infection control is of paramount importance during the treatment of patients as it safeguards the clinician and patient as well from contraction of various infectious diseases. For disinfection, method and material to be used varies with different impression material being used. This article describes the result of survey conducted to assess the awareness about the disinfection of different types of impression materials among the postgraduate students of dental colleges in south coastal region of Karnataka.

INTRODUCTION:

Impressions play a very important role from the preliminary step of diagnosis, planning a treatment and finally fabrication of definitive prosthesis. During impression making impression material comes in contact with oral fluids like blood and saliva which harbour a large number of microorganisms like bacteria and viruses.[1] These microorganisms can be source of infection and can cause cross contamination from clinician to patient, patient to patient and to other health care personnel. Microorganisms can also be transferred to dental laboratory and can contaminate other prosthesis being fabricated in lab which in turn becomes a source of infection for another patient, this cross contamination forms a vicious cycle which can be stopped by properly disinfecting the impressions after making them.

MATERIALS AND METHODS:

The study sample consisted of 100 subjects. Participants selected were postgraduate students from department of prosthodontics in dental colleges of south coastal region of Karnataka. An informed consent was taken from each participant before conducting the survey. The information was collected with the help of special prepared questionnaire, which consisted 14 questions based on knowledge related to disinfection of impression materials, type and method of disinfectant used, concentration and duration of disinfection for particular impression material.

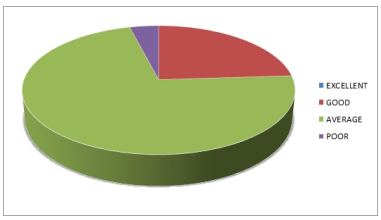
RESULTS:

Questionnaire forms from all participants were collected and results were analysed based on number of correct answers given. Results were subdivided in four categories

EXCELLENT (more than 12 correct questions)
GOOD (correct answers in range of 9-12)
AVERAGE (correct answers in range of 5-8)
POOR (4 or less than 4 correct answers)
Results obtained from postgraduate students were:

CATEGORY	NUMBER OF STUDENTS
EXCELLENT	0
GOOD	24
AVERAGE	72
POOR	4

Table 1: Awareness about disinfection among postgraduate students



Graph 1: Graph representing awareness among postgraduate students about aseptic handling of impressions.

DISCUSSION:

Dental impressions come in direct contact with saliva, blood and thus is a potential source of cross-infection. Dental impressions and gypsum casts obtained from patients are contaminated with numerous microbes.[2] An impression, if not disinfected, can cross-contaminate the entire laboratory area during fabrication of prosthesis. A simple regime of disinfection with commonly available disinfectant may be helpful in reducing cross contamination from impressions[3]

Cross infection may also occur between dental staff and patients from contaminated items transmitted from the dental laboratories to dental clinics. It was reported that over 60% of the prostheses transferred to clinics from laboratories are contaminated with pathogenic microorganisms emerging in the oral cavity of other patients.[4]

In the present study out of total 100 postgraduate students only 28% were aware that single most common method to prevent cross infection in clinic is hand washing.

Impressions should be rinsed to eliminate saliva, blood and debris and then disinfected before being sent to the laboratory.[5] Only 31% students accepted chairside rinsing of impressions under running tap water to be the first step in disinfection of dental impressions.

When considering methods of disinfection for impression in the current study, majority of the respondents were unaware about the appropriate method of disinfection for different impression materials as only 4% participants could realize immersion to be the most accepted method for disinfection of impressions.

Materials used for the impressions affect the efficacy of the

Volume - 7 | Issue - 2 | February - 2017 | ISSN - 2249-555X | IF : 3.919 | IC Value : 79.96

disinfection.[6] Majority of the students ie 64% and 72% were aware of the disinfectant to be used and duration of their usage for irreversible hydrocolloid and reversible hydrocolloid respectively.

Almost half of the participants knew that ethylene oxide, iodophors and glutaraldehyde can be used for disinfection of impressions made with impression compound and zinc oxide eugenol. 40% students were aware that rinse-spray-rinse-spray is the recommended method for disinfection of wax bites.

Awareness regarding disinfection of addition reaction silicone impression materials and polysulphide impression materials was quite poor as only 28% participants could answer correctly questions related to these materials.

42% subjects were aware that acrylic resin tray, aluminium metal tray and plastic trays can be disinfected using steam autoclave and chemical vapour.

Dental professionals are at greater risk of contracting HBV infection.[7] Cross-infection from herpes type 1 has been described from saliva contamination. Hepatitis B virus (HBV) poses a greater risk to dental staff with its ability to be transmitted in minute quantities in bodily fluids and remain virulent outside the body for lengthy periods.[8] This study therefore strongly recommends that there is need to raise awareness and implementation of disinfection of impression materials in dental health care settings.

CONCLUSION:

The results of this study showed that the majority of post graduate students have average knowledge about the use of disinfecting agents, rendering continuous educational programs essential in this respect.

Awareness regarding disinfection of impressions other than hydrocolloid materials was comparatively less among the conducted sample and requires definite improvement and reinforcement regarding the same.

This will absolutely decrease the risks of future complications related with contaminated impressions and will usher in an era of higher quality of care for patients while also ensuring protection from contamination for healthcare personnel.

REFERENCES:

1. Ross PW. Quantitative studies on the salivary flora. J Clin Pathol 1971: 24: 717–720.
2. Hiroshi Egusa, Takao Watamoto, Keiko Abe, Munemasa Kobayashi, Yoshitoshi Kaneda, Shunji Ashida, Takuya Matsumoto, Hirofumi Yatani, An Analysis of the Persistent Presence of Opportunistic Pathogens on Patient-Derived Dental Impressions and Gypsum Casts : Int J Prosthodont 2008;21:62–68.
3. Jennings KJ, Samaranayake LP, The persistence of microorganisms on impression materials following disinfection; Int J Prosthodont; 1991 Jul-Aug;4(4);382-7.
4. Powell GL, Runnells RD, Saxon BA, Whisenant BK. The presence and identification of organisms transmitted to dental laboratories. J Prosthet Dent 1990; 64(2): 235-237.
5. British Dental Association. Advice Sheet A12: Infection control in dentistry. London, British Dental Association, 2009.
6. Giammanco GM, Melilli D, Rallo A, Pecorella S, Mammmina C, Pizzo G; Resistance to disinfection of a polymicrobial association contaminating the surface of elastomeric dental impressions; New Microbiol. 2009 Apr;32(2):167-72.
7. Larry I. Lutwick, MD: The prevention of hepatitis B transmission in dental practice : The American Academy of Pedodontics/Vol. 4, No. 4.
8. Runnels RR (1988) An overview of infection control in dental practice. J Prosthet Dent. 59: 625-629.
9. Centers for Disease Control and Prevention. Recommended infection-control practices for dentistry. MMWR Morbid Mortal Wkly Rep. 1993;42:1-12.
10. Kohli A and Puttiah R. New Delhi: Dental Council of India; 2007 Dental Infection control and Occupational Safety for Oral Health Professionals.