93 - FORMALDEHYDE: DEGREE OF PERCEPTION OF TEACHERS AND ANATOMY LABORATORIES TECHNICIANS FROM UNIVERSITIES, WITH REGARD TO OCCUPATIONAL HAZARDS AND USE OF PPE

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INTRODUCTION

Formaldehyde is a colorless gas, water soluble with strong odor. It's used in liquid form, mixed with water, alcohol, ether, acetone and benzene, cannot be mixed with amines, because there is a strong chemical reaction resulting in products of high flammability (CITTADIN-SOARES; FORTUNATO, 2010).

Despite the high toxicity and high cost, the anatomy laboratories of institutions of higher learning (IES) use it on conservation (preservation) of corpses and anatomical parts (VERONEZ et. al., 2006; PEREIRA & ZAITA, 2008) by presenting satisfactory results (OLIVEIRA & ZAITA, 2005; MACHADO, 2005), even with real health risks. It should be consider that, often, in these enclosures, the concentration of the vapors reaches levels above 10 ppm (ten parts per million), being absorbed by airway (inhalation of vapors) or dermal absorption by accidental contact or the absence of the proper use of personal protective equipment – PPE (SALTHAMMER, 1994). Worth pointing out that an important factor to be considered is the absence of adequate ventilation in these laboratories. (VERONEZ et. al., 2006).

Detection of formaldehyde if the odor and, then the eye irritation when the concentration of vapors is on the order of 0.5 to 1 ppm; concentrations of 2 to 3 ppm triggering upper airway irritation but, as the individual adapts the substance, this reaction becomes less intense, what makes greater exposure; between 4 and 5 ppm are intolerable for most people, as it reaches the upper airways, causing irritation in the throat, coughing and breathing failure; and, of 25 to 30 ppm can cause severe damage in the respiratory tract, leading to pulmonary edema and other lung diseases, including the occupational cancer (MSDS, 2000), According to the International Agency for research on cancer (IARC, 2006), the Environmental Protection Agency (EPA, 1993), and by the Association of occupational health and safety (OSHA, 1987).

VERONEZ e col, (2006) reports that the recommended maximum limits of exposure to formaldehyde by international bodies are 1 ppm for 8:0 work days/day (National Institute of Occupational Safety and Health/NIOSH), 0, 1 ppm for external environments (American Industrial Hygiene Association/AIHA) and 0.2 ppm for indoor environments (American Society of Heating, Refrigeration and Air Conditioning Engineers/ASHRAE).

The formaldehyde is still considered as a human carcinogen the International Agency for research on Cancer (IARC, 2006), the Environmental Protection Agency (EPA, 1993), and by the Association of occupational health and safety (OSHA, 1987).

Handling formaldehyde solutions requires the use of PPE: apron, gloves and boots, mask with filter for acid gases and exhaust is used in place of handling of the substance, with the electric explosion-proof (ELEKEIROZ, 2008).

MATERIALS AND METHODS

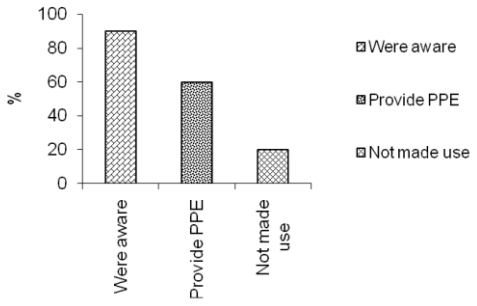
Was held a study, transverse, descriptive, quantitative, with direct data collection, where twenty (20) teachers and technicians of Anatomy of higher education institutions (IES), agreed to participate in the survey, by completing the term of free and informed consent (Resolução Nº 196/96 do C.N.S – M.S) and a form containing objective questions which were used as variables. The data, compiled after, were presented in tables and graphs of simple frequency expressed in numbers and percentages, statistical treatment for parametric data (arithmetic mean and standard deviation) and non-parametric (Fischer test).

OBJECTIVES

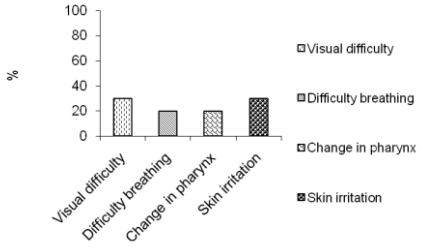
Check the degree of perception of teachers and technicians of laboratories of Anatomy, about the occupational hazards generated by exposure to formaldehyde, as well as the triggering of tolerance and the presence of signs and symptoms associated with the product according to the NR 15 Ordinance MT N° 3,214/78.

RESULTS

Graphic 1: Distribution in percentages with respect to knowledge of the occupational hazards with formol, supply and use of PPE, between teachers and technicians of laboratories of Anatomy, in Institutions of Higher Education of the city of São Paulo, 2014.



Graphic 2: Percentage distribution with respect to the presence of signs and symptoms reported by teachers and technicians of laboratories of Anatomy due to exposure to formaldehyde, in Institutions of Higher Education of the city of São Paulo, 2014.



CONCLUSION

The partial results obtained suggest the absence of a domestic politics in (IES) as for occupational hazards caused by the use of formol, just like a real ignorance of the NR 15 Ordinance MT N° 3,214/78, by means of the professionals in the field, Since, most professionals showed signs and symptoms by misuse and/or non-use's insistence of PPE. Tolerance is a factor that does not cause impact to them, but it can be extremely damaging to the health of same.

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FORMALDEHYDE: DEGREE OF PERCEPTION OF TEACHERS AND ANATOMY LABORATORIES TECHNICIANS FROM UNIVERSITIES, WITH REGARD TO OCCUPATIONAL HAZARDS AND USE OF PPE.

ABSTRACT

During the manipulation of anatomical parts by teachers and anatomy laboratories technicians from universities, intoxication may occur caused by formol, chemical agent responsible for the preservation of corpses and anatomical parts, what can jeopardize the health of these professionals in display function for long periods. To reduce this risk, it is necessary the use of PPE, according to the NR 15 Ordinance MT N° 3,214/78. Objective: Check the degree of perception of teachers and technicians of laboratories of Anatomy as well as, the occupational hazards and identify signs and symptoms reported by subjects of research arising from exposure to formol. Materials and Methods: This is an epidemiological study, transversal, descriptive, quantitative, whose 20 research subjects were asked to fill out a form with objective questions based on NR 15 Ordinance MT N° 3,214/78, which were used as variables in the composition of the research. Ethical aspects were observed. Partial Results: It was noted that 90% of respondents were aware of the risks caused by formol; 60% of the anatomy Labs provided only some PPE; 80% of workers report shows signs and formaldehyde poisoning symptoms where, 30% with visual difficulty, 20% breathing difficulties, 20% changes in pharynx and larynx and, 30% skin irritation. Conclusion: The partial results obtained suggest the absence of a domestic politics in (IES) as for occupational hazards caused by the use of formol, just like a real ignorance of the NR 15 Ordinance MT N° 3,214/78, by means of the professionals in the field.

KEYWORDS: Anatomical parts handlers, Professors of Anatomy, Health risks, Occupational safety, Formol.

FORMOALDEÍDO : DEGRÉ DE PERCEPTION DES ENSEIGNANTS ET TECHNICIENS DES LABORATOIRES DE L'UNIVERSITÉ D'ANATOMIE, RISQUES PROFESSIONNELS ET L'UTILISATION DES ÉQUIPEMENT DE PROTECTION INDIVIDUELLE (EPI).

RÉSUMÉ

Sommaire lors de la manipulation des parties anatomiques par enseignants et techniciens des laboratoires de l'Université d'anatomie, empoisonnement peut-être survenir causée par le formaldéhyde, agent chimique responsable de la conservation des cadavres et des pièces anatomiques, ce qui peuvent mettre en danger la santé de ces professionnels dans la fonction d'affichage pendant de longues périodes. Pour réduire ce risque, il est nécessaire l'utilisation d' Équipement de Protection Individuelle (EPI), déterminée par Norme Réglementaire 15 (NR 15) et Décret Ministériel (Ministère du Travail) Nº 3214/78. Objectif: Vérifier le degré de perception des enseignants et techniciens des laboratoires d'anatomie ainsi que d'étudier les risques professionnels et d'identifier les signes et symptômes rapportés par des sujets de recherche résultant de l'exposition au formaldéhyde. Matériels et méthodes: Il s'agit d'une étude épidémiologique, transversal, descriptif, quantitatif, dont 20 sujets de recherche ont été invités à remplir un formulaire avec des questions objectives basées sur Norme Réglementaire 15 et Décret Ministériel Nº 3214/78, qui ont été utilisées comme des variables dans la composition de la recherche. Aspects éthiques ont été observés. Résultats partiels: Il a été observé que 90% des répondants étaient au courant des risques causés par le formaldéhyde; 60% de l'anatomie Labs fournis seulement quelques EPI; 80% des travailleurs montre des signes et symptômes de formaldéhyde intoxication où, 30% avec des difficultés visuelles, 20% changements, 20%, des difficultés respiratoires dans le

pharynx et le larynx et la 30% irritation de la peau. Conclusion: Les résultats partiels obtenus suggèrent l'absence d'une politique intérieure dans les établissements d'enseignement supérieur par rapport à des risques professionnels causés par l'utilisation de formaldéhyde, mais aussi une véritable ignorance de la Norme Réglementaire 15 et de l'ordonnance nº 3214/78 MT, par des professionnels dans le domaine.

MOTS-CLÉS: Formaldéhyde, parties anatomiques des gestionnaires, professeurs d'anatomie, formaldéhyde risques, sécurité au travail.

FORMALDEHIDO: GRADO DE PERCEPCIÓN DE LOS PROFESORES Y TÉCNICOS DE LABORATORIOS UNIVERSITÁRIOS DE ANATOMÍA, CUANTO A LOS RIESGOS OCUPACIONALES Y EL USO DE EPI

RESUMEN

Durante la manipulación de la piezas anatómicas por los profesores y técnicos de laboratorios universitarios, se pueden ocurrir la intoxicación causada por el formol, agente químico responsable por la preservación de cadáveres y piezas anatómicas, lo que se puede poner en riesgo la salud de estos profesionales dependiendo de la exposición por largos períodos. Para reducir este riesgo, es necesario el uso de EPI, determinado por NR 15 portaría MT N° 3.214/78. Objetivo: Verificar el grado de percepción de los profesores y técnicos de laboratorios de anatomía así como, estudiar los riesgos ocupacionales e identificar signos y síntomas reportados por temas de investigación derivados de la exposición al formol. Materiales y Métodos: Este es un estudio epidemiológico, transversal, descriptivo, cuantitativo, cuyos 20 temas de investigación se les pidió que rellene un formulario con preguntas objetivas basadas en NR 15 portaría MT N° 3.214/78 que fueron utilizadas como variables en la composición de la investigación. Los aspectos étnicos fueron observados. Resultados Parciales: Se observó que 90 % de los entrevistados tenían conocimiento de los riesgos causados por el formol; 60% de los laboratorios de anatomía fornecían sólo unos pocos EPI; 80% de los profesionales relatan presentar signos y síntomas de la intoxicación por el formol donde, 30% con dificultad visual, 20% dificultades respiratorias, 20% alteraciones en la faringe y laringe y, 30% irritaciones en la piel. Conclusión: Los resultados parciales obtenidos sugieren la ausencia de una política interna en IES en relación con los riesgos profesionales causados por el uso del formol, así como una verdadera ignorancia del NR 15 portaría MT N° 3.214/78, por profesionales del área.

PALABRAS CLAVE: Manipuladores de piezas anatómicas, Profesores de anatomía, Riesgos a la salud, Seguridad en el trabajo, Formol.

FORMOALDEÍDO: GRAU DE PERCEPÇÃO DE PROFESSORES E TÉCNICOS DE LABORATÓRIOS UNIVERSITÁRIOS DE ANATOMIA, QUANTO AOS RISCOS OCUPACIONAIS E USO DE EPI'S.

RESUMO

Durante a manipulação das peças anatômicas pelos professores e técnicos de laboratórios universitários de anatomia, pode ocorrer a intoxicação causada pelo formol, agente químico responsável pela preservação de cadáveres e peças anatômicas, o que pode colocar em risco, a saúde destes profissionais em função da exposição por longos períodos. Para diminuir este risco, é necessário o uso de EPI'S, determinados pelas NR 15 e Portaria MT Nº 3214/78. Objetivo: Verificar o grau de percepção dos professores e técnicos de laboratórios de anatomia bem como, estudar os riscos ocupacionais e identificar sinais e sintomas relatados pelos sujeitos da pesquisa decorrentes da exposição ao formol. Materiais e Método: Trata-se de um estudo epidemiológico, transversal, descritivo, quantitativo, cujos 20 sujeitos da pesquisa foram convidados a preencher um formulário com questões objetivas baseadas na NR 15 e Portaria MT Nº 3214/ 78, as quais foram utilizadas como variáveis na composição da pesquisa. Os aspectos éticos foram observados. Resultados Parciais: Observou-se que 90% dos entrevistados tinham conhecimento dos riscos causados pelo formol; 60% dos laboratórios de anatomia forneciam apenas alguns EPI'S; 80% dos profissionais relatam apresentar sinais e sintomas da intoxicação por formol onde, 30% com dificuldade visual, 20% dificuldades respiratórias, 20% alterações na faringe e laringe e, 30% irritação na pele. Conclusão: Os resultados parciais obtidos sugerem a inexistência de uma política interna nas IES quanto aos riscos ocupacionais causados pelo uso de formol, assim como um real desconhecimento da NR 15 e da Portaria MT Nº 3214/78, pelos profissionais da área.

PALAVRAS-CHAVE: Manipuladores de peças anatômicas, professores de anatomia, Riscos à saúde, Segurança ocupacional, Formol.