117 - INTERFERENCE OF PREVENTIVE MEASURES IN THE IMPLICATIONS OF PNEUMONIA ASSOCIATED WITH MECHANICAL VENTILATION

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INTRODUCTION

According Kollef, 2005 associated pneumonia (VAP) is the infection acquired in the intensive care unit (ICU) more frequent among patients requiring invasive mechanical ventilation (IMV). In contrast to infections involving the skin, urinary tract and other organs, lung infection results in mortality rates ranging between 20 % and 70 % (ALP E et al, 2004 and the American Thoracic Society, 2005), becoming responsible thus, increased morbidity, mortality and hospital costs, resulting in increased duration of hospitalization and usually prolonged administration of antibiotics (CARRILHO, 2006).

Risk factors for the occurrence of VAP may be modifiable or non-modifiable, and are related to the patient or the treatment (Tablan et al, 2004 and Resar et al, 2005). Among the modifiable factors, we highlight the process of intubation, length of VMI, prolonged hospitalization and occurrence of reintubation, in addition to infection control procedures which include hand hygiene, microbial surveillance, monitoring and early removal of devices invasive and programs to reduce the use of antimicromianos (Teixeira et al, 2007 and BERWICK et al. 2006).

Some preventive measures for VAP has been shown effective in reducing their incidence being increasingly used and disseminated in the ICUs. Among these measures are: elevation of the head of the patient's bed 30º to 45º degrees, the patient's oral hygiene with chlorhexidine, completion of daily patient woke up (off sedation once a day), effective protocols for weaning from mechanical ventilation, hygiene the hands of health professionals, use of antiseptic impregnated tracheal tubes, use of tubes with the possibility of aspiration suprabalonete secretion and increased use of noninvasive ventilation (Morris et al, 2011), some authors suggest the deployment of institutional protocols (Masterton et al, 2007 and Resar et al, 2005). One of the targets of the campaign is to decrease the rates of hospital infection because it is estimated that at least 30 % of nosocomial infections can be prevented.

Therefore, the aim of this work is to verify whether the deployments of preventive measures interfere with the rate of ventilator-associated pneumonia.

METHODOLOGY

A historical cohort of patients undergoing invasive mechanical ventilation (IMV) in oncology intensive care unit of the West of Paraná was studied. All patients requiring IMV between the period January 2010 to December 2012 were included in the study. The prophylaxis protocol was designed so as to be easily carried out, aiming high adhesion of professionals providing ventilatory assistance in the unit , and is based on the elevation of the head of the bed between 30º and 45º, tooth brushing 3 times a day, then oral hygiene with chlorhexidine use, as well as training all staff on techniques of tracheal aspiration, as a way to avoid cross contamination. The study was fragmented into two chronological periods, before and after implementation of the protocol, in January 2011, comprising thus the periods from January 2010 to December 2010 and from January 2011 until December 2012. The data relating to days of IMV, crop type and incidence of VAP were collected in sterile, quantitative daily basis following the protocol of collecting epidemiological CCIH of the hospital, and later transferred to the research, the data were tabulated and analyzed through Microsoft Excel ® program. This study was approved by the Ethics Committee of the Faculty Assisi Gurgacz on 04/24/2013, ata 04 /13 and Protocol 035/2013.

RESULTS

Because this was an epidemiological study, the data collected varied according to existing flow in the hospital, where one can observe a gradual increase in demand during the study period, however, inversely proportional to this, there was a decrease in the incidence of VAP, as shown in the following table.

IMV DAYS AND IMPACT OF THE YEAR PAV

YEAR	2010	2011	2012
DAYS IMV	466	736	778
PAV	14	13	9

Source: CCIH Oncology Hospital of Paraná (2013)

The table below shows the data for the identification of microorganisms.

Microorganism / year	2010	2011	2012
Acinetobacter baumannii	0	2	1
Burkholderia cepacia	1	0	0
Candida spp	0	1	0
Clínica *	5	6	4
Enterobacter cloacae	1	0	0
Pseudomonas aeruginos	5	3	1
Staphylococcus aureus	1	0	2
Stenotrophomonas maltophilia	1	1	1
* Clinic - without identification of the microorganism			
Source: CCIH Oncology Hospital of Paraná (2013)			

Comparing the data collected before and after the application of the prophylaxis protocol, and transforming this data to a number of cases per 1000 days of IMV (table below), it can be seen, from the year 2010, a decrease in incidence of VAP of 40.94% in 2011 and 61.51% in 2012.

IMPLICATIONS OF DAYS PAV/1000 IMV

YEAR	2010	2011	2012
PAV	30,04	17,66	11,66

Source: CCIH Oncology Hospital of Paraná (2013)

DISCUSSION

The authors studied suggest that the head elevated between 30º and 45º has a higher rate of compliance of health professionals, reaching 95% participation and meaningful relationship with the reduction of VAP and may, in some cases, achieve zero infection rate (Resar et al., 2005; FOX, 2006; Youngquist et al, 2007).

Have the care of oral hygiene is to reduce plaque formation and accumulation of waste in the oropharynx, preventing the emergence of pathogenic microorganisms that can cause gingivitis, stomatitis, and consequently VAP. Suggesting that maintaining good oral health reduces the incidence of VAP (Rello et al., 2007).

The guideline of prevention of VAP, the Brazilian Society of Thoracic and Brazilian Association of Critical Care Medicine, present as Grade A recommendation, respiratory physiotherapy for systematic screening of weaning, following multidisciplinary protocol of the respective Unit (Teixeira et al., 2007). III Brazilian Consensus on mechanical ventilation, respiratory therapy is also indicated for the prevention of VAP in Grade C (NTOUMENOPOULOS et al, 2002;. Jerre et al, 2007).

Some studies evaluating interventions similar to that studied here, have achieved reductions of VAP from 46% to 74% (Baxter et al, 2001; Resar et al, 2005 and ZACK, 2008), confirming the findings of the authors of this research. The reduction in the incidence of VAP in a context of progressive increase in the rate of use of VMI, we infer that there was greater safety in patient care since the implementation of the prevention protocol, contributing in this way to reduce the occurrence of this infection. Corroborating with similar studies, which assert that the creation of a protocol for prevention of VAP, combined with training and support from all staff in the intensive care services, could contribute to a considerable reduction of this disease, if possible, therefore, to identify a protective effect exerted by these cautions in relation to the risk (VIEIRA, 2009).

CONCLUSIONS

It follows therefore that the adoption of preventive measures associated with the training and awareness of the multidisciplinary team, significantly reduces the risk of developing respiratory infections associated with invasive mechanical ventilation. And therefore the duration of mechanical ventilation and antibiotic therapy.

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ABSTRACT

The ventilator-associated pneumonia (VAP) is the infection acquired in the intensive care unit more frequent in patients requiring invasive mechanical ventilation (IMV), risk factors for VAP can be modifiable or not, can relate to the patient or treatment. Some measures to prevent VAP has been shown effective in reducing their occurrence being increasingly used in intensive care units (ICU). Aiming to verify if preventative measures interfere with the rate of VAP in an intensive care unit, oncology high complexity in western Paraná. To this end, we conducted a survey of a cohort of patients undergoing IMV, data collection was conducted by staff of the hospital and CCIH began in January 2010 extending until December 2012, being fragmented into two chronological time, before and after implementation of a protocol for the prevention of VAP. At the end of the study, we observed a decreased incidence of VAP, this value being 30.04 VAP cases/1000 days of VMI in 2010, before the implementation of the protocol and after the implementation of the protocol, in the years 2011 and 2012 the incidence was 17.66 cases of VAP/1000 days of IMV and 11.66 VAP cases/1000 days of IMV, respectively. We conclude therefore, that the adoption of preventive measures interferes with VAP, reducing their incidence as well as the risks attributed to it.

KEYWORDS: physical therapy, ventilator associated pneumonia, prevention, protocols, patient safety, ICU.

INTERFÉRENCE DES MESURES PÉVENTIVES DANS LE CONSÉQUENCES D'UNE PNEUMONIE LIÉES À VENTILATION MÉCANIQUE

RÉSUMÉ

La neumoníaasociada a laventilaciónmecánica (VAP) es lainfección adquirida enlaunidad de cuidados intensivos más frecuenteen pacientes que requierenventilaciónmecánica invasiva (VMI), losfactores de riesgo para VAP puede ser modificable o no, puederelacionarseconel paciente o tratamiento. Algunas medidas para prevenir la VMI se ha mostrado eficaz enlareducción de suincidencia está utilizando cada vez más enlas unidades de cuidados intensivos (UCI). Conel objetivo de verificar si las medidas preventivas interfierenconlatasa de NAVM en una unidad de cuidados intensivos, de alta complejidad de laoncologíaenel oeste de Paraná. Con este fin, se realizóunestudio de una cohorte de pacientes sometidos a IMV, larecolección de datos se llevó a cabo por elpersonaldel hospital y CCIH comenzóenenero de 2010 se extiende hasta diciembre de 2012, se fragmenta en dos eltiempo cronológico, antes y después de laimplementación de un protocolo para laprevención de laVAP. Al final delestudio, se observó una disminuciónenlaincidencia de VAP, siendo este valor 30,04 casos VAP/1000 días de VMI en 2010, antes de laaplicacióndel protocolo y después de laimplementacióndel protocolo, enlosaños 2011 y 2012 laincidenciafue de 17,66 casos de VAP/1000 días de IMV y 11,66 casos VAP/1000 días de IMV, respectivamente. Se concluye por tanto, que laadopción de medidas preventivas interfierecon VAP, reducirsuincidencia, así como losriesgos que se leatribuyen .

PALABRAS CLAVE: terapia física , neumoníaasociada a ventilación, prevención, protocolos, laseguridaddel paciente enla UCI.

INTERFERENCIA DE MEDIDAS PREVENTIVAS EN LAS CONSECUENCIAS DE LA NEUMONÍA ASSOCIADA A LA VENTILACÍON MECÂNICA

RESUMEN

La pneumoniesousventilationassistée (VAP) est l'infectionacquisedansl'unité de soins intensifsplusfréquente chez lespatientsnécessitant une ventilationmécaniqueinvasive (IMV), lesfacteurs de risque pourla VAP peutêtremodifiable ou non, peut se rapporteraupatient ou traitement. Certaines mesures visant à prévenir VAP a étémontréefficacedanslaréduction de leurprésence de plusenplusutilisédanslesunités de soins intensifs (USI). Visant à vérifier si les mesures préventivesinterfèrentavecletaux de VAP dans une unité de soins intensifs , l'oncologie grande complexitédansl'ouest de Paraná. À cettefin, nousavonsmené une enquête auprès d'une cohorte de patientssubissant IMV, lacollectedesdonnées a étéréalisée par lepersonnel de l'hôpital et CCIH a débutéenJanvier 2010 prorogeantjusqu'enDécembre 2012 fragmentéendeuxtempschronologique, avant et aprèslamiseencœuvre d'un protocole pourlaprévention de la VAP. A lafin de l'étude, nousavonsobservé une diminution de l'incidence de la VAP, cettevaleurétant 30.04 cas de VAP/1000 jours de VMI en 2010, avant lamiseencœuvredu protocole et aprèslamiseencœuvredu protocole, danslesannées 2011 et 2012, l'incidenceétait de 17,66 cas de VAP/1000 jours d' IMV et 11.66 cas de VAP/1000 jours d' IMV, respectivement. Nousconcluonsdonc que l'adoption de mesures préventivesinterfèreavecla VAP, laréduction de leurincidenceainsi que les risques quiluisontattribuées .

MOTS-CLÉS:physiothérapie,ventilateurpneumonieassociée, la prévention, les protocoles, lasécuritédespatients, de soins intensifs.

INTERFERÊNCIA DE MEDIDAS PREVENTIVAS NA INCIDÊNCIA DE PNEUMONIA ASSOCIADA À VENTILAÇÃO MECÂNICA

RESUMO

A pneumonia associada a ventilação mecânica (PAV) é a infecção adquirida em unidade de terapia intensiva mais freqüente em pacientes que necessitam de ventilação mecânica invasiva (VMI), fatores de risco para a PAV podem ser modificáveis ou não, podendo se relacionar ao paciente ou ao tratamento. Algumas medidas de prevenção da PAV tem se mostrado eficientes em reduzir sua ocorrência, sendo cada vez mais utilizadas nas unidades de terapia intensiva (UTI). Tendo como objetivo verificar se as medidas preventivas interferem no índice de PAV, em uma unidade de terapia intensiva oncológica da alta complexidade no Oeste de Paraná. Para tanto, foi realizado uma pesquisa de coorte com pacientes submetidos a VMI, a coleta de dados foi realizada pela equipe do CCIH do referido hospital e teve início em janeiro de 2010 estendendo-se até dezembro de 2012, sendo fragmentada em dois tempos cronológicos, antes e após a implantação de um protocolo de prevenção da PAV. Ao final do estudo, foi possível observar uma diminuição da incidência de PAV, sendo esse valor de 30,04 casos de PAV/1000 dias de VMI no ano de 2010, antes da implantação do protocolo e após a implantação do protocolo, nos anos de 2011 e 2012 essa incidência foi de 17,66 casos de PAV/1000 dias de VMI e 11,66 casos de PAV/1000 dias de VMI, respectivamente. Conclui-se dessa forma, que a adoção de medidas preventivas interfere na PAV, reduzindo a sua incidência assim como os riscos atribuídos a ela.

PALAVRAS CHAVE: fisioterapia, pneumonia associada a ventilação mecânica, prevenção, protocolos, segurança do paciente, unidade de terapia intensiva.