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Original article

Nivel de aplicación del protocolo FAST HUG en el Centro Médico Naval

Level of application of the FAST HUG protocol at the Naval Medical Center

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Resumen

Introducción: El apego al protocolo FAST HUG consiste en cuidar aspectos como la alimentación, analgesia, sedación, tromboprofilaxis, elevación de la cabecera, prevención de úlceras por estrés y el control de la glucosa en los pacientes. Estas medidas permiten disminuir lesiones, complicaciones o la tasa de morbimortalidad de quienes ingresan a las unidades de cuidados intensivos.

Objetivo: Describir el nivel de aplicación del protocolo FAST HUG por parte del personal de enfermería en la unidad de cuidados intensivos del Centro Médico Naval.

Metodología: Estudio descriptivo, observacional, transversal y prospectivo. La población estuvo conformada por 30 elementos del personal de enfermería especialistas en cuidados intensivos. Se utilizó una lista de verificación con indicadores contemplados en el protocolo FAST HUG.

Resultados: El nivel de apego al protocolo FAST HUG fue suficiente por un cumplimiento del 81.4 %. Estos resultados se explican por un apego eficiente en 4 partes de la mnemotecnia (S, H, U y G) con porcentajes mayores al 90 %; por otro lado, se observó un apego insuficiente en el inicio de alimentación temprana con un 43 %.

Conclusiones: La actuación enfermera sobre los cuidados a pacientes críticos en la unidad de cuidados intensivos del Centro Médico Naval es suficiente y beneficia su recuperación. Al mismo tiempo, representa una oportunidad para aspirar a mejorar el nivel de aplicación, además de incluir nuevos protocolos que incrementen la calidad de atención a los usuarios.

Palabras clave: FAST HUG, unidad de cuidados intensivos, calidad de atención en salud.

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Abstract

Introduction: Adherence to the FAST HUG protocol consists of taking care of aspects such as feeding, analgesia, sedation, thromboprophylaxis, bedside elevation, prevention of stress ulcers, and glucose control in patients. These measures make it possible to reduce injuries, complications, or the morbimortality rate of those admitted to intensive care units.

Objective: To describe the level of application of the FAST HUG mnemonic protocol by the nursing staff in the intensive care unit of the Naval Medical Center (CEMENAV).

Methodology: Descriptive, observational, cross-sectional, and prospective study. The population consisted of 30 intensive care nurses from the morning, afternoon, evening, night A, and night B shifts and patients admitted to this service during June 2023. A checklist with indicators contemplated in the FAST-HUG protocol was used.

Results: The level of adherence to the FAST-HUG protocol was sufficient, with a compliance rate of 81.4%. These results are explained by an efficient adherence in 4 parts of the mnemonic (S, H, U, and G) with percentages higher than 90 %; on the other hand, an insufficient adherence was observed in the early feeding initiation with 43 %.

Conclusions: Nursing performance on critical patient care in the ICU of the CEMENAV is sufficient and benefits their recovery. At the same time, it represents an opportunity to aspire to improve the level of application, in addition to including new quality protocols that increase the quality of care for patients.

Key words: FAST HUG, intensive care unit, quality of health care.

Introduction

The World Health Organization (WHO) defines quality of care as the degree to which health services can deliver the desired outcomes to patients. To this end, health personnel use their knowledge and react. This is based on the use of the knowledge of health personnel and a reaction based on scientific evidence, aiming to solve universally the problems of each individual[1].

Other institutions, in conjunction with the WHO, such as the Organization for Economic Cooperation and Development (OECD) and the World Bank (WB), have implemented various measures to achieve quality health services[2]. Some of these are universal and quality health coverage; national policies and strategies to improve the quality of care in all structures; efforts by the government and health personnel, as well as financial resources to facilitate quality care; this includes continuous surveillance systems and accessible health service delivery units that are well equipped; and health services that are available in case of any public health emergency or at the national level.

Thus, the concept of quality is related to continuous monitoring processes in favor of the recovery and maintenance of each patient's health. Establishing these control and monitoring processes is necessary to evaluate the results and find areas of opportunity where the quality of care of the patient can be improved[3].

The use of guidelines and protocols is a measure that makes it possible to identify the patient's state of health and act quickly to promote recovery. These tools also help to unify the efforts of health personnel with the optimal level of quality sought in intensive care units (ICU)[3].

In 2005, Jean-Louis Vincent suggested the concept of FAST HUG as a simple mnemonic for remembering the most important points in the care of critically ill patients. F stands for feeding; A, for analgesia; S, for sedation; T, for thromboprophylaxis; H, for bedside elevation; U, for stress ulcer prevention; and G, for glycemic control. However, this concept was updated in 2009 by Vincent W.R. and Hatton K. W.; specifically, the acronym BID was added, which refers to spontaneous ventilation, bowel care, catheter care, and antibiotic de-escalation[4,5].

At the Naval Medical Center (CEMENAV), the FAST HUG protocol has been implemented to ensure patient safety. This protocol has been approved by the General Health Council and aims to reduce or eliminate deficiencies in the delivery of healthcare services. If these deficiencies are not adequately addressed, they can lead to prolonged hospital stays and increased costs. Therefore, the purpose of this research was to evaluate the level of adherence of nursing staff to the FAST HUG protocol in adult patients admitted to the ICU at the Naval Medical Center.

Materials and methods

This is a descriptive, observational, cross-sectional, prospective study. The study population consisted of 30 members of the CEMENAV nursing staff, who were evaluated during June 2023, specifically in the adult intensive care unit. Given that specific characteristics were required in the variables of interest, a non-probabilistic type of sampling was used for this study.

The inclusion criteria for this study were as follows: specialist nursing staff assigned to the adult intensive care unit of CEMENAV in the morning, afternoon, evening, night A and night B shifts. As exclusion criteria, specialists in intensive care who did not provide care were considered. The study focused on analyzing the application of the FAST HUG protocol. In addition, sociodemographic variables such as academic level, sex, age, work shift, and seniority in the service were considered, and obtained through staff surveys.

To collect the necessary data, a checklist was used to evaluate the personnel's adherence to the protocol during their care activities. The application of the FAST HUG protocol was determined according to compliance with the corresponding indicators, assigning a percentage of adherence to the protocol itself. Sociodemographic variables were obtained through staff surveys.

The analysis of the information collected in this study was carried out using a variety of tools and resources. For data processing and document writing, computer equipment and computer programs were used, including Microsoft Office (Word and Excel). In addition, Statistical Package for Social Sciences (SPSS) software was used for statistical analysis. Regarding physical resources, the infrastructure necessary to implement the protocol was provided by CEMENAV, which included adequate facilities and equipment for this study.

Descriptive statistics were performed to analyze the variables included in the study. A percentage approach was used to describe

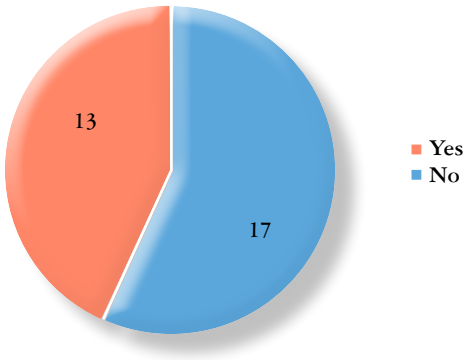
attachment, adopting a classification of the following levels: efficient application (>90 %), sufficient application (80-89 %), and insufficient application (<80 %). In addition, measures of central tendency, such as mean and median, were applied for a deeper understanding of the data. To examine possible associations or differences between nursing staff characteristics and their adherence to the FAST HUG protocol, the Chi-squared test was used.

Results

Of the 30 participants in the sample analyzed, 67% of the nursing staff were female and 33% were male. The majority (57 %) were in the age range of 31 to 40 years, 30 % belonged to the group of 22 to 30 years, and 13 % were between 41 and 50 years of age. Concerning educational background, 67 % had postgraduate studies, 23 % had completed a post-technical level, and the remaining 10 % had a bachelor's degree. Regarding work experience in the nursing service, 53 % had 1 to 5 years of seniority, 23 % had between 6 and 10 years, 17 % had between 11 and 15 years, and 7 % had between 16 and 20 years of experience in the field. The distribution of the participants according to their work shift was as follows: 24% worked the morning shift, 30% worked the evening shift, and night shift A and night shift B each accounted for 23% of the personnel.

Figure 1 illustrates the results related to the early initiation of feeding (F), which, according to the guidelines, should be provided between the first 24 and 48 hours. It was observed that in 57% of the cases, feeding was initiated on time, while in 43% it was not initiated.

Graph 1. Early onset of feeding (F) in ICU patients



Source: Own elaboration based on nursing staff records.

Analgesia (A), consists of providing timely pharmacological therapy to relieve pain in patients[9]. Regarding the assessment of the level of analgesia, 67% of the participants indicated that it is performed, while 33% indicated that it is not.

Regarding pain management according to medical indications, a high percentage (97 %) stated that it is adequately carried out, in contrast to only 3 % who indicated otherwise. Regarding the scale used for assessment, 67 % of the cases used the Behavioral Pain Scale (BPS), while no scale was used in 33 % of the participants (Table 1).

Table 1. Assessment of sedation (S)

Categories	Assesses the level of analgesia		Manages pain according to medical indications	
	N	%	*N*	%
Yes	20	67	29	97
No	10	33	1	3

Source: Own elaboration based on nursing staff records.

Regarding the sedation variable (S)[10], it was observed that 83% of the participants did evaluate the level of sedation, while 17% did not. Regarding its management according to medical indications, a high percentage, 97%, stated that it was adequately managed, as opposed to 3% who indicated that they had not done so.

Regarding the sedation rating scales used, 83 % (n=25) used the Richmond Agitation-Sedation Scale (RASS), 3 % (n=1) used the RAMSAY scale, and 14 % (n=4) did not apply any scale (Table 2).

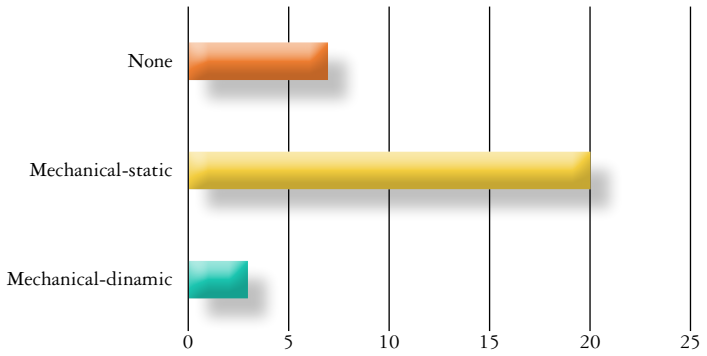
Table 2. Valoración de la sedación (S)

Categories	Assesses the level of sedation		Manages sedation according to medical indications	
	N	%	*N*	%
Yes	25	83	29	97
No	5	17	1	3

Source: Own elaboration based on nursing staff records.

The evaluation of thromboprophylaxis (T) measures, essential to reduce the risk of deep vein thrombosis and thromboembolic events, venous or pulmonary, revealed varied distributions in their application[11,12]. According to the results shown in Graph 2, the most commonly used thromboprophylaxis measure was mechanical-static, used in 67% of cases. Mechanical-dynamic measures were used in 10 %. Notably, 23% of the cases did not apply any thromboprophylaxis measure.

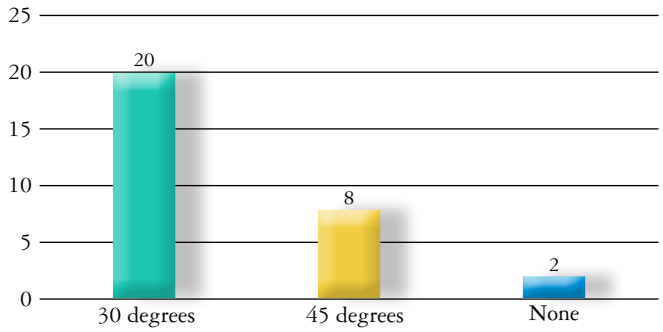
Graph 2. Thromboprophylaxis measures used (T)



Source: Own elaboration based on nursing staff records.

Regarding the headrest elevation (H) and the degree of tilt applied, the results showed that 67% of the nursing staff elevate the headrest to 30°, 27% choose to elevate it to 45°, while 6% do not elevate the headrest at all (Figure 3).

Graph 3. Headrest elevation (H)



Source: Own elaboration based on nursing staff records.

The evaluation of measures to prevent stress ulcers (U) showed high compliance in the application of gastric mucosal protective drugs[13], with 93 % of the nursing staff implementing this practice. According to the results shown in Table 3, the predominant route of administration of these drugs was intravenous, used in 77% of the cases, followed by oral administration in 17%. The route of administration was not recorded in 6 % of the cases.

Table 3. Stress ulcer assessment (U)

Categories	Applies gastric mucosal protective drugs		Categories	Route of administration	
	N	%		*N*	%
Yes	28	93	Oral	5	17
No	0	0	Intravenous	23	77
Not indicated	2	7	None	2	6

Source: Own elaboration based on nursing staff records.

In Table 4, which details glucose (G) control[14,15], it is observed that 93% of the nursing staff carried out glucose measurement during their shift. Regarding the application of pharmacological treatment, based on the figures obtained, 37 % applied such treatment, while 10 % did not. It should be noted that, in the context of glucose measurement, the category "*Not required*" is not applicable, although this category was included in the section on the application of pharmacological treatment, where it was recorded that, for 53% of the cases, it was not necessary to apply treatment.

To determine the level of personnel adherence to the FAST HUG protocol, the

Table 4. Glucose control (G)

Categories	On-shift glucose measurement		Applies pharmacological treatment according to the figures obtained	
	N	%	*N*	%
Yes	28	93	11	37
No	2	7	3	10
Not required	-	-	16	53

Source: Own elaboration based on nursing staff records.

average compliance of all the items included was calculated. The result yielded an average of 81.4 %, which was considered sufficient implementation. As seen in Table 5, the total number of items completed in the sample of 30 participants ranged from a minimum of 3 to a maximum of 7, with a mean of 5.60 and a standard deviation of 1.248. In terms of percentage compliance, the values ranged from 42.86 % to 100.00 %, with a mean of 79.9990 % and a standard deviation of 17.83451 %.

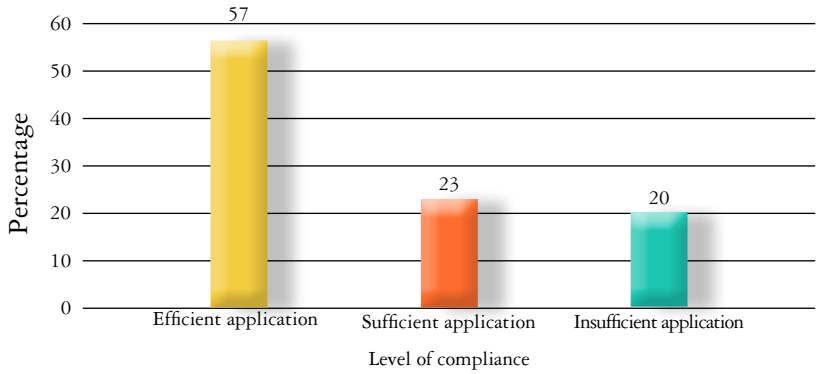
Table 5. Level of adherence to the FAST HUG protocol

	Minimum	Maximum	Media	Deviation
Total items completed	3	7	5,60	1,248
Compliance (%)	42,86	100,00	79,99	17,83

Source: Own elaboration based on nursing staff records.

Figure 4 shows the distribution of compliance with the FAST HUG mnemonic protocol among the participants, categorized according to the pre-established levels. Of the 30 items evaluated, 57% (n=17) achieved efficient application; 23% (n=7) were in the sufficient application category; and finally, 20% (n=6) of the items fell into the insufficient application category.

Graph 4 . Distribución del cumplimiento del protocolo FAST HUG, según niveles establecidos



Source: Own elaboration based on nursing staff records.

Finally, statistical analyses were performed to explore possible relationships between the level of compliance with the FAST HUG protocol and multiple sociodemographic and professional variables. Using Pearson's Chi-square test and Fisher's exact test, associations were examined with the area of medical diagnosis, educational level, work shift, sex, length of service, and age of participants.

The results of these analyses revealed the absence of significant differences. The crossover with the area of medical diagnosis showed a *p-value* of 0.5321, and the analysis related to educational level yielded a *p-value* of 0.642. Regarding the work shift, sex of the participants and length of service, the *p-values* were 0.117, 0.139 and 0.674, respectively. Finally, the relationship with the age of the participants resulted in a *p-value* of 1.000.

Discussion

This study presents notable contrasts with previous research. It differs from the findings of Sanchez Nava[16] *et al*, in Mexico, who determined that compliance with four or more components of the FAST HUG protocol reduces the risk of mortality in critical ICU patients. In contrast to this study, Sanchez Nava *et al*. also linked the protocol components to the mortality rate, observing compliance of more than 80% in four of the seven components of the FAST HUG.

Likewise, the results of the present study contrast with those of Curiel Balsera *et al*.[17], who reported compliance above 90% in all components of the FAST HUG, with the exception of glucose control; similarly, they differ from the results obtained by Barrera Jiménez *et al*.[6] in 2019, who highlighted that nutrition, sedation, and thromboprophylaxis measures had greater relevance in reducing the risk of mortality in patients.

On the other hand, a coincidence was found with the research carried out by Mayo Hernández[18], which concludes that an attachment or adherence of less than 80% is considered insufficient. Similarly, this finding is in agreement with the study by Morales Alvarado[19], which states that a value above 80% is sufficient to improve the recovery of critically ill patients in the ICU.

Regarding the sufficient results achieved in this study, in aspects such as analgesia, sedation and thromboprophylaxis, it is in line with the observations of authors such as Rodriguez Ferreira *et al*.[20], who have highlighted the advantages for patients of applying all the components of the FAST HUG protocol. Specifically, it has been shown that the comprehensive implementation of this protocol can contribute to a reduction in the incidence of ventilator-associated pneumonia, hospital costs and mortality rates.

Finally, the results of the present investigation contrast with those obtained by Ortega Sagardi and Orozco Chino[21], who observed an absence of 90 % in compliance with pain assessment, 95 % in head elevation and the same percentage of absence for the recording of antibiotic scaling, as well as a total absence in the recording of spontaneous breathing tests. The average total adherence was less than 80 %, while in the present study a result of 81.4 % was obtained.

Conclusions

After evaluating the performance of the nursing staff in the intensive care unit of

CEMENAV, in this study, it can be concluded that the performance has been, in general, sufficient in most of the areas evaluated. This finding supports the perception that the services offered by CEMENAV are efficient; however, it is worth noting the opportunity for continuous improvement in the level of adherence to the FAST HUG protocol, which would have a direct impact on improving services and patient recovery.

It is important to note that the level of adherence observed does not appear to be directly related to individual characteristics of the nursing staff involved in this study. Therefore, further research along these lines is suggested to further explore possible relationships and influencing factors.

The knowledge gained through this research is essential to properly understand and apply the principles of the FAST HUG protocol. The ultimate goal is to contribute to a decrease in the mortality rate and promote more effective patient recovery. Furthermore, in settings where the FAST HUG mnemonic protocol is already implemented, these results provide a solid basis for identifying and improving specific areas where the level of adherence to the protocol can be optimized.

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