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NURSING DIAGNOSES IN PATIENTS WITH HOSPITAL INFECTION

DIAGNÓSTICOS DE ENFERMAGEM EM PACIENTES COM INFECÇÃO HOSPITALAR

DIAGNÓSTICOS DE ENFERMERÍA EN PACIENTES CON INFECCIÓN NOSOCOMIAL

Rebeca Baldo Santos[1], Erika Christiane Marocco Duran[2], Elenice Valentim Carmona[3], Luciana de Lione Melo[4], Ana Raquel Medeiros Beck[5]

ABSTRACT

Objective: identifying the most common nursing diagnoses in patients with nosocomial infection. ***Method:*** retrospective cohort study that analyzed medical records of hospitalized patients from June 2011 to March 2012 in an intensive care unit of a public teaching hospital, after the project was approved by the Research Ethics Committee, Protocol 26293. ***Results:*** in the 98 evaluated medical records were identified 854 diagnoses, averaging 8,7 diagnoses per patient. The most frequent diagnoses were: risk for infection (99%), bathing self-care deficit (97,9%), risk for impaired skin integrity (93,9%), impaired physical mobility (92,8%), ineffective airway clearance (90,8%), risk for aspiration (90,8%), and impaired skin integrity (88,8%). ***Conclusion:*** the phenomena named by nurses are compatible with the needs of patients admitted to the intensive care unit. ***Descriptors:*** Nursing Diagnosis; Nursing Process; Intensive Care Units; Hospital infection.

RESUMO

Objetivo*:** identificar diagnósticos de enfermagem mais frequentes em pacientes com infecção hospitalar. ***Método: estudo coorte retrospectivo, que analisou prontuários de pacientes internados de junho de 2011 a março de 2012 em de uma unidade de terapia intensiva de um hospital público de ensino, após a aprovação do projeto pelo Comitê de Ética em Pesquisa, Protocolo 26293. ***Resultados***: nos 98 prontuários avaliados foram identificados 854 diagnósticos, com média de 8,7 diagnósticos por paciente. Os diagnósticos mais frequentes foram: Risco de infecção (99%), Déficit do autocuidado para banho (97,9%), Risco de integridade da pele prejudicada (93,9%), Mobilidade física prejudicada (92,8%), Desobstrução ineficaz de vias aéreas (90,8%), Risco de aspiração (90,8%) e Integridade da pele prejudicada (88,8%). ***Conclusão***: os fenômenos nomeados pelos enfermeiros são compatíveis com as necessidades de pacientes internados na unidade de terapia intensiva. ***Descritores*:** Diagnóstico de Enfermagem; Processos de Enfermagem; Unidades de Terapia Intensiva; Infecção Hospitalar.

RESUMEN

Objetivo: identificar los diagnósticos de enfermería más frecuentes en los pacientes con infección nosocomial. ***Método:*** un estudio de cohorte retrospectivo que analizó las historias clínicas de los pacientes hospitalizados desde junio 2011 a marzo 2012 en una unidad de cuidados intensivos de un hospital público de enseñanza, después de que el proyecto fue aprobado por el Comité de Ética en la Investigación, Protocolo 26293. ***Resultados:*** en las 98 listas que se evaluaron fueron identificados 854 diagnósticos, con un promedio de 8,7 diagnósticos por paciente. Los diagnósticos más frecuentes fueron: riesgo de infección (99%), déficit de autocuidado para el baño (97,9%), el riesgo de deterioro de la integridad de la piel (93,9%), movilidad física alterada (92,8%), compensación ineficaz las vías respiratorias (90,8%), el riesgo de aspiración (90,8%), y la integridad de la piel alterada (88,8%). ***Conclusión:*** los fenómenos nombrados por las enfermeras son compatibles con las necesidades de los pacientes ingresados en la unidad de cuidados intensivos. ***Descriptores:*** Diagnóstico de Enfermería; Procesos de Enfermería; Unidades de Cuidados Intensivos; Infección Nosocomial.

[1]Graduate Student, School of Nursing, State University of Campinas/ FEnf/Unicamp. Campinas (SP), Brazil. Email: rebeca_baldo@hotmail.com; [2]Nurse, Professor of Nursing, School of Nursing, State University of Campinas/FEnf/Unicamp. Campinas (SP), Brazil. Email: erikacmduran@gmail.com; [3]Nurse, Professor of Sciences, School of Nursing, State University of Campinas/FEnf/Unicamp. Campinas (SP), Brazil. Email: elenicevalentim@uol.com.br; [4]Nurse, Professor of Nursing, School of Nursing, State University of Campinas/FEnf/Unicamp. Campinas (SP), Brazil. Email: lulione@unicamp.br; [5]Nurse, Professor of Nursing, School of Nursing, State University of Campinas/FEnf/Unicamp. Campinas (SP), Brazil. Email: armbeck.rb@gmail.com

INTRODUCTION

Nosocomial infection (NI) is all hospital-related infection when the time of microorganism incubation is unknown and there is clinical evidence and/or given laboratory of infection at the time of patient admission. Thus, it is considered NI all clinical signs of infection that is present from 72 hours of admission.[1]

NI is a serious threat to patients admitted to Intensive Care Unit (ICU). In this context of care, patients have unfavorable conditions and are routinely subjected to invasive procedures, which increase the risk of infection. Therefore, ICU patients have from five to 10 times more likely to acquire an infection and may represent approximately 20% of all infections in hospitals.[2] NI represent a major public health problem, since it increases the morbidity, mortality and hospital costs.[3]

Observation systems provide subsidies to NI control activities, by identifying groups of factors or risk procedures. Stratification of infection rates according to risk factors is an important component of these programs. Thus, the National Nosocomial Infections Surveillance System (NNISS) has been improving the monitoring of the incidence of NI, since 1970. From the understanding that hospital infections result from assistance, as well as processes associated with it, the data from this type of system can be used as quality indicators, including nursing care. The advantage of using NNISS methodology is that indicators can be evaluated and compared by researchers and between institutions.[4]

Considering the importance of quality indicators and monitoring, Nursing Process (NP) is an important nurses' working tool, since it makes possible the promotion of the complete and individualized assistance. The NP is not an end on itself, but directs and organizes clinical thinking ahead to the patient's needs and demands related to technological advances. The NP is divided into interdependent and dynamic stages: data collection; defining ND (Nursing Diagnosis); planning; implementation of interventions and evaluation of results.[5-7]

Once the NP stages are based on clinical reasoning, it is essential that data collection contemplates history, physical examination and consultation using records of different professionals and data collection with the family. This is for deciding which are the needs of each patient, becoming an assertive judgment: the Nursing Diagnosis (ND).[8] It is considered that the data recorded on the NP are also quality indicators of care, as bringing the issues raised, interventions and results from them. What justifies associate this with methods like NNISS in the search to understand and record data on the clinical condition of the patient and think of strategies to improve care by the hospital patient under intensive care.

The NP has legal support of Resolution 358/2009 of the Federal Nursing Council (COFEN), blaming nurses for leadership in the implementation and evaluation of NP, but there are still limitations and resistance in its application. In this context it is necessary to develop a care management to succeed better results for patient and institution.[9]

The patient who is in ICU requires complex nursing care, critical and frequent evaluations, especially when clinical condition is unstable and infection is confirmed. Therefore, the NP is an interesting tool to help nurses to develop plans for complete and well-targeted care.

It is essential to nurses´ clinical judgment upon individual responses to health problems, current or potential, to plan interventions that can bring satisfactory results to the patient and nursing quality excellence. Therefore, this study aims to:

- Identifying more frequent nursing diagnoses in patients with nosocomial infection.

METHOD

The present study is a retrospective cohort in which we investigated medical records of adult patients with NI in an ICU at University Hospital of the State University of Campinas (Unicamp), Brazil. It is a 20 beds ICU, of which 10 are intended for clinical emergency patients and 10 for surgical emergencies. This is a public teaching hospital which is referred to more than 60 municipalities.

There were included all patients admitted to the ICU of the hospital who had a confirmed diagnosis of NI, from June 2011 to March 2012. For inclusion it was also considered the presence of registration at least one ND after confirmation of NI. We considered all ND described in a specific form of the unit and present in each chart covering the period from the confirmation of NI until ICU discharge or death of the patient.

The identification of patients with NI was obtained through the census provided by CCIH (Hospital Infection Control Commission), which uses the NNISS. Thereafter, the records were located in the SAM (Medical Archiving Service) for data collection. The instrument

used for data collection was developed by authors for this research: the first part of it was intended to characterize the subject as age, sex and type of NI; the second for the registration of ND in the mentioned period.

A database was developed using the Microsoft Excel program 7.0. The data were presented in the form of descriptive statistics, with absolute frequency (n) and relative (%). The study was approved by the Research Ethics Committee of the institution under the report number 26293, and did not involve any kind of intervention with the subject, but consultation of chart data.

RESULTS

The list provided by CCIH contained a total of 120 patients in the described period with confirmed NI. Of these, eight records were not found in SAM during the period of data collection and 14 did not have ND after IH confirmation; which meant they were excluded from the study. Thus, 98 charts were analyzed. Most patients were female (52%), the average age was 50,8 years old, median 51,5 and standard deviation 20,2. From the collected records, 35 patients (35,7%) died (Table 1).

Table 1. Distribution of sociodemographic characteristics of patients with hospital infection admitted to the Intensive Care Unit of the University Hospital of the State University of Campinas. Campinas (SP), Brazil, in 2012 (n = 98)

Variables		n	%
Sex	Female	51	52
	Male	47	48
Age	14-20	5	5,1
	21-30	18	18,4
	31-40	10	10,2
	41-50	16	16,3
	51-60	10	10,2
	61-70	19	19,4
	71-80	17	17,3
	81-94	4	4,1
Death		35	35,7

The most common NI was pneumonia (59%). Two patients presented two different types of infections in the same date, therefore it were considered the total equal to 100 (Table 2).

Table 2. Distribution of hospital infection patients admitted to the intensive care Unit of the Hospital of clinics of Universidade Estadual de Campinas (UNICAMP), in accordance with the categories of nosocomial infection-NNISS. Campinas (SP), Brazil, 2012.

Variable	Categories of infection	n	%
Hospital Infection (NNISS)	Pneumonia	59	59
	Urinary tract infection	21	21
	Sepsis	16	16
	Cardiovascular	3	3
	Skin and subcutaneous tissue	1	1
Total		100	100

Considering the different clinical decisions of nurses about diagnoses labels, defining characteristics, related factors and risk factors, it have been found 854 ND in the 98 medical records, with an average of 8.7 diagnoses per patient. It were identified 18 diagnoses in medical records of patients (Table 3). We chose to discuss the NDs those were present in 75% or more of the analyzed charts: the first seven diagnoses of Table 3.

Table 3. Nursing Diagnoses identified in records of patients with nosocomial infection in the intensive care unit of the Universidade Estadual de Campinas University Hospital. Campinas (SP), Brazil, in 2012 (n = 98)

Nursing diagnosis	n	
	n	%
Risk for infection	97	99
Bathing Self-care deficit	96	97,9
Risk for impaired skin integrity	92	93,9
Impaired physical mobility	91	92,8
Ineffective airway clearance	89	90,8
Risk for Aspiration	89	90,8
Impaired skin integrity	87	88,8
Imbalanced nutrition: less than body requirements	73	74,4
Impaired spontaneous ventilation	71	72,4
Acute pain	56	57,1
Risk for Shock	4	4,1
Risk for vascular trauma	2	2
Risk for unstable blood glucose	2	2
Risk for bleeding	1	1
Risk for constipation	1	1
Impaired tissue integrity	1	1
Diarrhea	1	1
Acute confusion	1	1

By checking the number of proposed ND, according to the specific NI, there was the following distribution: patients with pneumonia showed 530 diagnoses, averaging 9 diagnoses per patient; with the urinary tract, 175, with an average of 8,3 diagnoses per patient; sepsis, 134 diagnoses and average of 8 per patient; cardiovascular infection, 26 with an average of 8,7; and the only patient with skin infection and subcutaneous tissue showed 10 ND.

DISCUSSION

The sample showed gender balance. Patients older than 60 years old represented 40,8% of those affected by NI. These data are similar to another study upon patients with NI: 49,2% of them being female and 38,4% with over 60 years old.[10] Elderly patients are more vulnerable to infection due to senility physiological changes, as the decline of the immune response, and the need for invasive procedures.[10]

The NI incidence rates vary according to type of unit and the population, reaching 10% to 30% of patients, which characterizes an important factor to increase morbidity and mortality.[9] Mortality can exceed 25%,[10] which also corroborates the findings of this study.

Regardless of patients age, the health care in the ICU is challenged constantly by NI, since intensive care patients experience many procedures, handled numerous times by different professionals, while they present immune impairment and/or physiologic: risk factors for the development of NI.[10]

Study developed in two intensive care units, one of them at a public hospital and the other at a teaching hospital, showed worrying rates of NI, which is an indirect measure of the quality of patient care. The most common infections were: respiratory (60,15%), systemic (17,77%), urinary tract infection (16,24%) and others (5,84%)[12]. Pneumonia is the most common infection of the respiratory tract, accounting for 86% of infections in patients under mechanical ventilation.[13] Both in this study and in the cited, the majority of patients were under mechanical ventilation and using central and urinary catheters.

Urinary tract infections (UTI) in European ICUs account for 18% of the acquired NI, as in the United States amount to one third of all infections, with 80% of them related to the use of indwelling catheters. This makes UTI one of the most frequent infections in adults. The duration of catheterization period is a risk factor for its occurrence. Sepsis ranges from 9,6% to 23,3% in similar population characteristics. [10-1]

Technological advances as the invasive procedures, diagnostic and therapeutic infection become a constant challenge for the health professionals.[14-5] However, descriptive studies provide data so that prevention can be strengthened in the most common situations, such as: pneumonia related to mechanical ventilation, UTI associated with urinary catheter and venous catheter-related sepsis central.[10]

Of a total of 854 DE in 98 records, being 18 different ND, the seven most frequent diagnoses corroborate the results of similar surveys, as well as the described percentage: risk for infection;[16-17] bathing self-care deficit, [7, 15.18] impaired skin integrity risk, [7.19] impaired physical mobility; [15] risk for aspiration,[7.20]

ineffective airway clearance [21] and impaired skin integrity.[7,15]

The ND "Risk for infection" is often named for patients under intensive care, and the risk factors that describe are closely related to these customers.[16] In addition, the risk increases with the number of professionals who come into contact with the pacient.[17] Decide for this diagnosis and register it to a patient with NI may be something controversial and subject to criticism, since it is probable that there is no risk but the real presence of infection. Moreover, although the patient is already confirmed with an infectious agent in a particular site, the phenomenon remains a risk to others of which are not present; what makes not invalidate this nursing phenomenon and the care that should be proposed.

"Bathing Self-Care Deficit", defined as "impaired ability to perform or complete bathing/hygiene activities for self,"[8] is a ND that adequately describes the characteristics of patients under intensive care, which are dependent on nursing staff. Many of them are hemodynamically stable and therefore require professionals specific aware.[15] Similarly, the diagnosis "Impaired physical mobility," which defines a "limitation in independent, purposeful physical movement of the body or of one or more extremities"[8] can be considered as a human response compatible with critically ill patient, who may show impaired physical mobility due to disease that affects and/or treatment imposed on it: the presence of drains and probes, pain during physical movement, monitoring, among others.

Since most patients in intensive care will have two last-mentioned diagnostics, it is correct to describe them, but not at the expense of more accurate diagnoses, which are related to them. For example: ND related to pain can target interventions that will improve both patient mobility and self-care; this to avoid the simple filling out forms without clinical thinking and prioritization.

The "Risk for impaired skin integrity ", which is the "at risk for alteration in epidermis and/or dermis,"[8] is constant assistance in this context. The relevance of nurses consider it early and keep vigilance is its possible association with other ND, as: "risk for infection", "acute pain", "chronic pain", " situational low self-esteem", "fear", "anxiety" among others.[19]

The ICU also presents patients under the effect of sedatives, unconscious, feeding by gastric tube, with decreased gastrointestinal motility and using cannula endotracheal.[20] These are risk factors for the diagnosis "Risk for aspiration," which is defined as "input risk of gastrointestinal secretions, oropharyngeal, solid or fluid secretions in the tracheobronchial tract".[8]

The obstructed airway, either by spasm, exudate, excessive mucus or artificial airway are related factors of the ND "Ineffective airway clearance", defined as "inability to clear secretions or obstruction of the respiratory tract to maintain a route clear air".[8] This diagnosis also describes a significant problem of nursing in health care of the patient ICU.[21]

The most frequent ND in this study are similar to results of another study, which suggests a profile for the ICU patient. The lower frequency of some diagnoses may be related to specific responses in some patients. It was also observed the prevalence of ND aimed to physiological human responses, indicating that the setting of this study, the ICU, directs thinking and team actions for physiological processes.[15] It did not find in literature studies investigating ND present in each type NI.

CONCLUSION

The most frequent ND of patients with NI, at an adult ICU, were: risk for infection; Bathing self-care deficit; risk for impaired skin integrity; impaired physical mobility; risk for aspiration; ineffective airway clearance and impaired skin integrity.

All these diagnoses describe adequately human responses presented by patients under intensive care. However, naming them cannot guarantee that the clinical reasoning is facing and the priorities for individualized care.

Knowledge of the most frequent ND in different care setting could help to draw epidemiological profiles, which would direct the NP, planning of human and material resources, establishment of continuing education programs, and help the development of science in nursing. However, it is still required to improve nurses education and involvement considering NP. This is based on the continuous process of data collection, given these that help nurses to appoint more accurately the phenomena. For that, nurses must be able to decide on the relevance of a particular diagnosis over others and realize the overlapping diagnoses, to name what is most significant for each patient.

It is necessary go beyond filling forms without clinical reasoning. The reasoning is what allows identifying individually patient needs.

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Corresponding Address

Elenice Valentim Carmona
Faculdade de Enfermagem – Universidade Estadual de Campinas
Rua Tessália Vieira de Camargo, 126
Bairro Cidade Universitária Zeferino Vaz
CEP 13083-887 — Campinas (SP), Brazil