



INDICATORS OF QUALITY OF NURSING ASSISTANCE IN PERIPHERAL INTRAVENOUS THERAPY

INDICADORES DE QUALIDADE DA ASSISTÊNCIA DE ENFERMAGEM NA TERAPIA INTRAVENOSA PERIFÉRICA

INDICADORES DE CALIDAD DE ATENCIÓN DE ENFERMERÍA EN LA TERAPIA INTRAVENOSA PERIFÉRICA

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ABSTRACT

Objective: to verify the quality indicators of Nursing care in peripheral intravenous therapy. **Method:** observational, descriptive, exploratory study, with a quantitative approach, conducted at a Philanthropic Hospital in the male and female ward. For the analysis of the CVP, the date of puncture and/or validity were verified. For the data analysis, the calculation of quality indicators of Nursing care was used. **Results:** 515 observations were made, corresponding to 96.62% in relation to the opportunities and; an average of 25 observation/day. An 86.1% compliance indicator was obtained on the identification of the peripheral venous catheter and; of 42.5%, for identification of serum equipment 42.5%. It was identified that 40% of the patients who were using equipment and bottles of serum did not meet the safety criteria. **Conclusion:** in relation to the indicators of quality of care in peripheral intravenous therapy, especially care for the peripheral vascular catheter, it is concluded that it is still a challenge, especially those referring to serum care and infusion speed control. **Descriptors:** Nursing Care; Peripheral Catheterization; Quality Indicators, Health Care; Patient Safety.

RESUMO

Objetivo: verificar os indicadores de qualidade da assistência de Enfermagem na terapia intravenosa periférica. **Método:** estudo observacional, descritivo, exploratório, de abordagem quantitativa, realizado em um Hospital Filantrópico no setor de enfermagem masculina e feminina. Para análise dos CVP, verificou-se a identificação da data da punção e/ou validade. Para a análise dos dados, utilizou-se o cálculo de indicadores de qualidade da assistência de Enfermagem. **Resultados:** foram realizadas 515 observações, o que corresponde a 96,62% em relação às oportunidades e uma média de 25 observação/dia. Obteve-se um indicador de 86,1% de conformidade acerca da identificação do cateter venoso periférico e de 42,5% de identificação de equipo de soro 42,5%. Identificou-se que 40% dos pacientes que estavam fazendo uso de equipo e frascos de soros não atendiam a critérios de segurança. **Conclusão:** em relação aos indicadores de qualidade da assistência na terapia intravenosa periférica, em especial ao cuidado ao cateter vascular periférico, conclui-se que ainda é um desafio, em especial àqueles que remetem aos cuidados com o soro e controle de velocidade da infusão. **Descritores:** Cuidados de Enfermagem; Cateterismo Periférico; Indicadores de Qualidade em Assistência à Saúde; Segurança do Paciente.

RESUMEN

Objetivo: verificar los indicadores de calidad de atención de Enfermería en la terapia intravenosa periférica. **Método:** estudio observacional, enfoque cuantitativo, exploratorio, descriptivo, realizado en un Hospital Filantrópico en el sector de enfermería masculino y femenino. Para el análisis CVP, se ha identificado la fecha de punción o validez. Para análisis de datos, se utilizó el cálculo de indicadores de calidad de atención de Enfermería. **Resultados:** se realizaron 515 observaciones, que corresponde al 96.62% en relación a las oportunidades; un promedio de nota 25/día produjo un 86.1% indicador de cumplimiento sobre la identificación de catéter venoso periférico; de 42.5%, identificación del equipo de suero de 42.5%. Identificó que el 40% de los pacientes que estaban haciendo uso de equipos y botellas de soros no cumplió con los criterios de seguridad. **Conclusión:** con respecto a los indicadores de calidad de la atención en la terapia intravenosa periférica, especialmente al catéter vascular periférico, se ha concluido que es todavía un reto, en particular aquellos que se refieren a la atención y el control de la velocidad de la infusión. **Descriptor:** Cuidados de Enfermería; Cateterización Periférica; Indicadores de Calidad de Atención de Salud; Seguridad del Paciente.

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INTRODUCTION

Changes in health care models and the development of new technologies have resulted in a potential increase in the risks inherent to care. In order to mitigate the failures in health care, the National Agency of Sanitary Surveillance (ANVISA), following the international trends, released six protocols of attention to patient safety.

Among the mentioned protocols, there is the "Protocol of Safety in Prescribing, Use and Administration of Medicines", which deals with safe practices related to the prescription, distribution, dispensing, storage and administration of medicines.¹ This protocol highlights some points attention in order to prevent the occurrence of errors, however, is little discussed in this document about the maintenance and safety-oriented care of the route of administration of these drugs.

In the treatment of hospitalized patients, Peripheral Vascular Catheters (PVC) are the most commonly used route of administration. Among the situations with greater indication of use, it is mentioned the administration of medicines, intermittent therapy, nutrients, blood and derivatives; And for the accomplishment of the technique of insertion of the PVC, the Nursing team needs scientific and practical knowledge.² In this way, the inadequate management of the peripheral catheters can constitute a risk for the safety of the patient.

Among the possible complications related to incorrect management of PVC are bloodstream infections, infiltration / extravasation, catheter obstruction and phlebitis²⁻⁴. It is highlighted, as an aggravating circumstance, that these cited adverse events lead to an increase in the morbidity and mortality rate in the health services, increase expenses with patient care, and increase hospitalization time.⁴⁻⁵

In the understanding of the complexity of processes that involves the management of PVC, it is noticed that the insertion and maintenance of intravenous devices by the vascular access is not free from damage, which may be related to both local, and systemic complications.⁴ Thus, Care with PVC constitutes a tool for patient safety, since its correct handling prevents and reduces the incidence of adverse events related to health care.⁶⁻⁷

The importance of investigating attitudes toward safety with PVC has been demonstrated in a recent study carried out in an adult ward of a clinic hospital, in which

was identified an incidence rate of phlebitis was identified among the patients studied, five times greater than It is accepted by the Infusion Nurses Society.⁸ Thus, it is worth noting that knowing the safety indicators related to the management of the PVC constitutes a conduit for risk management in the institutions, as it allows the planning of actions to prevent adverse events .

It should be emphasized that the results of this study may serve as a subsidy for the managers responsible for the quality of care, as a way to improve patient care and safety. In view of the above and with an interest in the investigation of safety practices, this study has as a research question: How is the quality of Nursing care in the management of the peripheral venous catheter in a philanthropic hospital? To answer this question, the objective is to verify the quality indicators of Nursing care in peripheral intravenous therapy.

METHOD

An observational, descriptive, exploratory, quantitative approach, conducted at a Philanthropic Hospital in the interior of Paraná. This hospital is intended for the care of patients from the Unified Health System (UHS) and other health plans.

It was appointed, for data collection, a male and female ward for the care of patients in clinical and surgical specialties, exclusive of UHS, which has a total of 44 beds.

The study population consisted of patients who met the following inclusion criteria: a) Be over 18 years of age; B) Have one or more PVC inserts; C) Presence in bed at the time of data collection; D) Signature of the Informed Consent Term (ICT).

The data were collected in August 2015, for 20 consecutive days and in alternate periods, in order to contemplate the assistance provided by all the work shifts. As a guide for observation, the items of the Active Search Registry Instrument⁹ were used to answer the question of this study. In this way, the number of venous accesses, equipment and serum labels that met the minimum identification requirements and the number of patients with or without post-infiltrative skin lesions were quantified. The observation of the indicators was performed according to each descriptor of the Operational Manual of Nursing Care Quality Indicators.⁹

For the analysis of the PVC, it was verified the date of puncture and / or validity. According to the *Centers for Disease Control and Prevention* (CDC), the specified device

replacement time is every 72-96 hours and, for ANVISA, the exchange has to be performed every 72 hours.¹⁰⁻¹ For this study, the national parameters and standardization of the institution were considered, recommending the exchange every 72 hours or in the presence of a sign of infection.

Regarding the equipment, should contain the date of installation or validity. The period of exchange, according to ANVISA, is 72-96 hours for continuous infusion equipment and 24 hours for intermittent infusion.⁹⁻¹⁰ The serum bottles should be labeled with patient name, bed and infirmary, medication , Volume, time of medication and signature of the responsible official. In addition, it should contain the graduated scale with the time provided for infusion of the solution and the tape with graduation.⁹

Regarding post-infiltrative cutaneous lesions, both members of the patients who had or were using venous infusion were observed for phlebitis, areas of necrosis, infiltrations (seromas), hematoma, and ecchymosis.⁹

For the analysis of the data, the calculation of Nursing care quality indicators was used.⁹ In this way, the number of PVC/equipment/serum bottles with adequate identification / day was divided by the

number of devices in the period, multiplying Your result for a hundred.

The data were tabulated in spreadsheets and the frequencies and percentages were calculated. The presentation of the results was done through descriptive statistics, in the form of tables.

The ethical guidelines and precepts have been respected and the research project is registered under CAAE n° 46123415.7.0000.0104.

RESULTS

There were 533 observation opportunities for patients that met the inclusion criteria, however, there were 18 denials. Thus, a total of 515 observations were obtained, which corresponds to 96.62% in relation to observation opportunities and; an average of 25 observation / day.

Table 1 presents the data obtained from quality indicators of Nursing care to peripheral intravenous therapy.

Table 1. Nursing care compliance indicators for peripheral intravenous therapy. Paranavaí (PR), Brazil, 2015.

Variables	Média	*DP	**IC 95%	Indicador (%)
Number of peripheral venous accesses with adequate identification and that are not overdue	22.2	3.8	(20.7 - 23.6)	86.1
Number of serum identification equipment with appropriate identification	7.6	5.41	(5.6 - 9.6)	42.5
N ° of sera labels with proper identification and with correct graded WITH	0.3	0.44	(0.1 - 0.4)	2.2
Nº of patients WITHOUT infiltrative cutaneous lesions	25.3	4.19	(23.7 - 26.8)	98

*SD, Standard Deviation; **CI - Confidence Interval

Table 2 summarizes results on equipment identification, serum flasks and infusion rate control in peripheral intravenous therapy.

Table 2. Frequency and percentage measures of equipment identification indicators, serum bottles and infusion rate control in peripheral intravenous therapy (n = 424). Paranavaí (PR), Brazil, 2015.

Variables	Daily Values				Total	
	Average	SD	Minimum	Maximum	N	(%)
Number of serum equipment WITH appropriate identification	6.5	5.41	0	22	152	35.85
Number of serum WITH inadequate identification	4.2	4.42	0	14	83	19.58
Number of serum equipment WITHOUT identification	7	7.28	0	28	167	39.39
Number of serum equipment WITH adequate identification, but overdue	0	0.89	0	3	0	0.00
Number of serum labels WITH proper identification and WITH correct graded scale	0	0.44	0	1	5	1.18
Number of serum labels WITH proper identification and WITH incorrect graded scale	0	1.79	0	8	8	1.89
Number of serum labels WITH appropriate identification and WITHOUT graded scale	14	13.52	0	43	357	84.20
Number of serum labels WITHOUT identification and WITHOUT graded scale	0	0.52	0	2	4	0.94
Number of serum equipment WITH appropriate identification	2	1.88	0	7	50	11.79

DISCUSSION

Table 1 shows that, in relation to the adequate identification of PVC numbers, the sector showed an indicator of 86.1%, considered good, although it did not reach the ideal compliance rate of 100% established by Vituri.⁹ According to the author, The PVC identification must be 100% compliant because the absence of PVC increases the risk of infection. In addition, it is noted that the identification of the PVC number, at the time of insertion, is characterized as part of the standardization of the procedure, and its execution is mandatory.

A study carried out in two teaching hospitals in the interior of Paraná also did not obtain the adequate index for the PVC indicator, and one of the hospitals had an indicator of 33.77% .¹² On the other hand, another study carried out in all the hospital, presented in one of the units a 96% compliance indicator, which refers to a quality of care.¹³

It is emphasized that the identification of the catheter allows for the carrying our of changes in a systematic and planned way. This is necessary because the literature states that the incidence of bacterial infections and thrombophlebitis increases when the catheter is maintained for more than 72 hours, which depends on the presence of catheter identification.¹⁴

Regarding the indicator of identification of serum equipment, a result of only 42.5% was observed in the patients observed, which makes it impossible to know the date of exchange of the same. This indicator was also analyzed in a study carried out in two public university hospitals in the interior of Paraná, which presented an index ranging from 33.16% to 81.71%, and did not reach the desired parameters.¹² This fact indicates the need of caution to items that include patient safety, which also implies identification of this device.

Such practices of not adequately identifying the number of PVC and serum equipment may expose the patient to the risk of infections and adverse reactions, this associated with the maintenance and inadequate installation of these devices and can lead to increased permanence and costs of hospital admission .⁴ It is worth mentioning that it is the responsibility of the Nursing team to maintain these devices for intravenous therapy, which includes the correct identification of PVCs and serum equipment.

The identification of serum flasks and infusion rate control in this study presented worrying results, since their calculation determined an indicator of only 2.2% of compliance (Table 1). It is important to identify the serum flasks correctly in order to prevent mistakes such as administration of

medicines in exchange patients and / or in wrong drug concentrations.¹⁵

In addition to preventing administration errors, it is important to control the infusion rate, especially in the use of controlled medications. As with the previous statement, a study showed that the infusion rate for patients with epilepsy should not exceed 50 mg / min in adults, 25 mg / min in children and 20 mg / min in the elderly, with the following side effect: Cardiac arrhythmias and hypotension.¹⁶ Given this, it is believed that infusion rate control is of great importance, in order to avoid complication to the patient.

Another study points out that the failures related to the control of the infusion rate may be related to the infusion pump programming due to the inadequate use of the infusion pump, making it necessary to qualify the professionals.¹⁷ These data indicate a greater attention on the part of the nurse, Since the task of supervising and training the Nursing team is the same.

Table 2 presents the measures of frequency and percentage of variables related to the equipment and flasks of sera. The results obtained in relation to the equipment identification indicator are indicated, because of the 424 equipment observed, only 152 (35.85%) were adequately identified and 167 (39.39%) were not identified. In this way, almost 40% of patients were using a device that did not meet the safety criteria.

The manipulation of the equipment is associated with patient safety and constitutes a risk when the date of installation or replacement is not identified, since when the deadline is exceeded the risk of infections and adverse reactions is raised.^{4,10}

It is important to note that only five (1.18%) of the solutions administered during the data collection period had the serum label identified and the correct graduated scale. The data suggest a fragility of care and alert to the need for greater attention of the unit nurse in the act of supervising and training their staff, which, as already mentioned, constitute nurses' activities.¹⁸

In order to improve the care provided to the patient, it is necessary to carry out a permanent educational process, aiming to modify professional practices, promoting the growth and training of workers, according to institutional and collective reality. Permanent health education should be carried out at work, becoming a means to convert daily events into knowledge, reflecting on the difficulties of professional performance and seeking alternatives to solve the problem.¹⁹

Regarding serum labels (Table 2), 50 (11.79%) of the administered solutions observed did not present identification and scale, which deserves attention, since, for the safe administration of the medications, it is essential that the label contains all the information. This is because, in case of intercurrents, such as an allergic reaction, it is necessary to identify the causative factor of the problem to improve the intervention of the professionals.¹²

The above results, together with the fact that 84.20% of the labels were identified, but with no graduated scale, lead to the conclusion that the Nursing team rarely performs drip control (Table 2), showing gaps in Nursing supervision, Which may reflect on patient safety failures.

The incidence of post-infiltrative skin lesions was only 2%, that is, 98% of the patients did not present bruising or drug infiltration (Table 1). This shows that, despite the failures in device identification, the team performs the necessary care for the procedure and maintenance of access. The study²⁰ evidenced that the occurrence of infiltration is the major cause of change in peripheral venous access (53%), which leads to the conclusion that there are several elements besides direct Nursing assistance that help in this result such as inadequate installation, medication reaction, absence Of site observation, occurrence of seroma and poor peripheral perfusion.

CONCLUSION

Nursing care in relation to PVC care indicators is still a challenge, especially, those that refer to serum care and infusion speed control. This fact may be associated with the numerous activities that the Nursing team competes for and its work overload, as well as failures in nurse supervision, responsible for the management of care, which can negatively influence the quality of care.

It is noteworthy that only the indicator post-infiltrative skin lesions reached the recommended compliance for the quality of Nursing care. Thus, it is up to the nurse to supervise and train the Nursing team as to the importance of proper identification of the devices and their impact on patient safety.

It is considered that the main limitation of this study is the non-identification of the period of use of the PVC, since this data directly interferes with the presence or absence of cutaneous infiltrative skin lesions. However, the study contributes to the reflection about the quality of care And

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patient safety. In this way, it was identified that it is fundamental the encouragement to the permanent education in health of the Nursing team, in order to improve the knowledge and skills. Another important aspect would be an adequate dimensioning of the Nursing staff, besides direct supervision and routine follow-up by the nurse.

REFERENCES

1. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária, Gerência de Vigilância e Monitoramento em Serviços de Saúde, Gerência Geral de Tecnologia em Serviços de Saúde. Assistência segura: uma reflexão teórica aplicada à prática [Internet]. Brasília: Ministério da Saúde; 2013 [cited 2015 Mar 15]. Available from: http://www20.anvisa.gov.br/segurancadopaciente/images/documentos/livros/Livro1-Assistencia_Segura.pdf
2. Batalha LMC, Costa LPS, Almeida DMG, Lourenço PAA, Gonçalves AMFM, Teixeira ACG. Setting of peripheral venous catheters in children: comparative study. Esc Anna Nery Rev Enferm [Internet]. 2010 July/Sept [cited 2015 June 26];14(3):511-8. Available from: <http://www.scielo.br/pdf/ean/v14n3/v14n3a12.pdf>
3. Magerote NP, Lima MFM, Silva JB, Correia MDL, Secoli SR. Relation between phlebitis and peripheral intravenous catheter removal. Texto contexto-enferm [Internet]. 2011 July/Sept [cited 2015 July 24];20(3):486-92. Available from: <http://www.scielo.br/pdf/tce/v20n3/09.pdf>
4. Silva LS, Barbato MHS, Valente GSC. Nurses' production regarding peripheral venous catheters used in pediatric procedures: systematic review. J Nurs UFPE Online [Internet]. 2013 Apr [cited 2015 Apr 17];7(4):1195-2003. Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/4359/pdf_2419
5. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária, Gerência de Vigilância e Monitoramento em Serviços de Saúde, Gerência Geral de Tecnologia em Serviços de Saúde. Medidas de prevenção de infecção relacionada a assistência em saúde [Internet]. Brasília: Ministério da Saúde; 2013 [cited 2015 Apr 15]. Available from: <http://www20.anvisa.gov.br/segurancadopaciente/images/documentos/livros/Livro4-MedidasPrevencaoIRASaude.pdf>
6. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Protocolo de Segurança na Prescrição, Uso e Administração de Medicamentos [Internet]. Brasília: Ministério da Saúde, 2013 [cited 2015 Apr 18]. Available from: <http://www20.anvisa.gov.br/segurancadopaciente/index.php/publicacoes/item/seguranca-na-prescricao-uso-e-administracao-de-medicamentos>
7. Domingues G, Moraes FRRL, Ferreira Junior MA. Tempo de permanência dos cateteres venosos periféricos e seus riscos para flebite relacionado ao sítio de inserção. Rev Cient Linkania Júnior [Internet]. 2012 Apr/July [cited 2015 Nov 29];2(3):1-10. Available from: <http://linkania.org/junior/article/view/50/44>
8. Urbanetto JS, Rodrigues AB, Oliveira DJ, Dornelles FF, Rosa Filho JM, Gustavo AS, et al. Prevalence of phlebitis in adult patients with peripheral venous. R Enferm UFSM [Internet]. 2011 Sept/Dec [cited 2015 Apr 25];1(3):440-8. <https://periodicos.ufsm.br/reufsm/article/view/3283/2409>
9. Vituri DW, Matsuda LM. Validação de conteúdo de indicadores de qualidade para avaliação do cuidado de enfermagem. Rev Esc Enferm USP [Internet]. 2009 June [cited 2015 Apr 19];43(2):429-37. Available from: <http://www.scielo.br/pdf/reeusp/v43n2/a24v43n2.pdf>
10. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Orientações para Prevenção de Infecção Primária de Corrente Sanguínea [Internet]. Brasília: Ministério da Saúde; 2010 [cited 2015 Apr 19]. Available from: <http://www20.anvisa.gov.br/segurancadopaciente/index.php/publicacoes/item/orientacoes-para-prevencao-de-infeccao-primaria-de-corrente-sanguinea>
11. Centers for Diseases Control and Prevention. Department of Health and Human Services. Guideline for the Prevention of Intravascular Catheter-Related Bloodstream Infections Final Issue Review [Internet]. Atlanta: CDC; 2010 [cited 2015 Apr 21]. Available from: http://www.cdc.gov/hicpac/pdf/BSI_guideline_IssuesMay17final.pdf
12. Murassaki ACY, Versa GLGS, Bellucci Júnior JA, Meireles VC, Vituri DW, Matsuda LM. Evaluation of care in intravenous therapy: a challenge for quality in nursing. Esc Anna Nery Rev Enferm [Internet]. 2013 Jan/Mar [cited 2015 Apr 25];17(1):11-6. Available from: <http://www.scielo.br/pdf/ean/v17n1/02.pdf>
13. Souza AEER, Oliveira JLC, Dias DC, Nicola AL. Nursing care quality in peripheral intravenous therapy: analysis by indicators.

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Cogitare enferm [Internet]. 2014 July/Sept [cited 2015 Apr 21];19(3):521-7. Available from:

<http://revistas.ufpr.br/cogitare/article/view/35808/23234>

14. O' Grady NP, Alexander M, Burns LA, Dellinger EP, Garland J, Heard SO, et al. Guidelines for the Prevention of Intravascular Catheter-related Infections. Clin Infect Dis [Internet]. 2011 May [cited 2015 Apr 19];52(9):e162-e93. Available from:

<https://www.ncbi.nlm.nih.gov/pmc/articles/21460264/>

15. Santos JC, Ceolim MF. Nursing iatrogenic events in hospitalized elderly patients. Rev Esc Enferm USP [Internet]. 2009 Jan [cited 2015 Apr 19];43(4):810-7. Available from:

<http://www.scielo.br/pdf/reeusp/v43n4/a11v43n4.pdf>

16. Garzon E. Status epilepticus. J epilepsy clin neurophysiol [Internet]. 2008 Nov [cited 2015 Apr 28];14(Suppl 2):7-11. Available from:

<http://www.scielo.br/pdf/jecn/v14s2/v14s2a02.pdf>

17. Lerner RBME, Carvalho M, Vieira AA, Lopes JMA, Moreira MEL. Medication errors in a neonatal intensive care unit. J Pediatr (Rio J.) [Internet]. 2008 Mar/Apr [cited 2015 Apr 28];84(2):166-70. Available from:

<http://www.scielo.br/pdf/jped/v84n2/v84n2a13.pdf>

18. Lei nº 7.498/86, de 25 de junho de 1986. Dispõe sobre a regulamentação do exercício da Enfermagem e dá outras providências. Brasília: Presidência da República; 1986 [cited 2015 Apr 28]. Available from:

<http://www.scielo.br/pdf/ean/v14n3/v14n3a12.pdf>

19. Ministério da Saúde (BR), Secretaria de Gestão do Trabalho e da Educação na Saúde Departamento de Gestão da Educação em Saúde. Política Nacional de Educação Permanente em saúde [Internet]. Brasília: Ministério da Saúde; 2009 [cited 2015 Apr 12]. Available from:

<http://portal.anvisa.gov.br/documents/33856/396770/Pol%C3%ADtica+Nacional+de+Educa%C3%A7%C3%A3o+Permanente+em+Sa%C3%BAde/c92db117-e170-45e7-9984-8a7cdb111faa>

20. Barbosa MTSR, Alves VH, Rodrigues DP, Branco MBLR, Souza RMP, Bonazzi VCAM. Quality indicators in support of intravenous therapy in a university hospital: a contribution of nursing. J res fundam Care online [Internet]. 2015 Apr/June [cited 2015 Apr 28];7(2):2277-86. Available from:

http://www.seer.unirio.br/index.php/cuidadofundamental/article/viewFile/3551/pdf_1533

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