

Nationwide survey on resource availability for implementing current sepsis guidelines in Mongolia

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Objective To assess if secondary and tertiary hospitals in Mongolia have the resources needed to implement the 2008 Surviving Sepsis Campaign (SSC) guidelines.

Methods To obtain key informant responses, we conducted a nationwide survey by sending a 74-item questionnaire to head physicians of the intensive care unit or department for emergency and critically ill patients of 44 secondary and tertiary hospitals in Mongolia. The questionnaire inquired about the availability of the hospital facilities, equipment, drugs and disposable materials required to implement the SSC guidelines. Descriptive methods were used for statistical analysis. Comparisons between central and peripheral hospitals were performed using non-parametric tests.

Findings The response rate was 86.4% (38/44). No Mongolian hospital had the resources required to consistently implement the SSC guidelines. The median percentage of implementable recommendations and suggestions combined was 52.8% (interquartile range, IQR: 45.8–67.4%); of implementable recommendations only, 68% (IQR: 58.0–80.5%) and of implementable suggestions only, 43.5% (IQR: 34.8–57.6%). These percentages did not differ between hospitals located in the capital city and those located in rural areas.

Conclusion The results of this study strongly suggest that the most recent SSC guidelines cannot be implemented in Mongolia due to a dramatic shortage of the required hospital facilities, equipment, drugs and disposable materials. Further studies are needed on current awareness of the problem, development of national reporting systems and guidelines for sepsis care in Mongolia, as well as on the quality of diagnosis and treatment and of the training of health-care professionals.

Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

Sepsis is the leading cause of death in intensive care units (ICUs) in high-income countries, and its incidence is on the rise.¹ Annually, 750 000 cases of sepsis occur in the United States of America (USA).² In Germany, sepsis claims 60 000 lives a year and is the third most common cause of death.³ Despite these disquieting figures from high-income countries, most of the global burden of sepsis occurs in middle- and low-income countries, where approximately two-thirds of the world's population resides.⁴ Low living standards and poor hygienic conditions, together with widespread malnutrition and bacterial, parasitic and HIV infections, further increase the burden of sepsis in these countries.⁵ According to the latest global burden of disease report of the World Health Organization (WHO), three infectious diseases were among the four most frequent causes of death in low-income countries.⁶

Mongolia is home to about 2.6 million people and is classified as a middle-income country by The World Bank.⁴ Despite an economic boom following the end of communist rule in 1990, Mongolia faces substantial political, social and health-care problems. Insurance systems are insufficient, and Mongolia's health policy still favours spending on curative rather than preventive services, although there is a renewed focus on primary health

care. In 2005, the average life expectancy at birth in Mongolia was 65 years.⁷ Three infectious diseases are among the top 10 causes of death in the country,⁷ where sepsis is the single most frequent diagnosis in patients admitted to ICUs.⁸ In a 2008 study, the rate of sepsis among patients admitted to ICUs was found to be twice as high in Mongolia as in Austria.⁹

In 2001, 2004 and 2008, international experts released guidelines for the management of patients with severe sepsis and septic shock.^{10–12} Known as the Surviving Sepsis Campaign (SSC) guidelines, they are among the first international consensus guidelines for septic patients needing intensive care and include recommendations on initial resuscitation, infection management, haemodynamic support, adjunctive therapy and other supportive measures.¹² Integration of the SSC guidelines into clinical care significantly improves clinical outcomes.^{13–15} Because sepsis is the leading cause of death in the ICUs of high-income countries,¹ the SSC guidelines are considered a milestone in improving the care and clinical outcomes of the critically ill. However, certain resources are required to implement SSC guidelines. These resources, which are routinely available in high-income countries, are often lacking in health-care facilities in middle- or low-income countries, according to recent reports.^{16–20} The availability of the resources needed to properly treat sepsis in middle- or low-income countries needs to be in-

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investigated so that the SSC guidelines can be adapted and implemented in the light of what is available.

The objective of this nationwide survey was to investigate the availability of the resources needed to implement the most recent SSC guidelines in secondary and tertiary hospitals in Mongolia. We hypothesized that such resources were not available in Mongolian hospitals, particularly in rural areas.

Methods

In October 2009 we conducted a nationwide survey in Mongolia by mailing 44 questionnaires to all 24 secondary and tertiary hospitals in Ulaanbaatar, the capital city, henceforth known as central hospitals, and all 20 provincial referral hospitals in rural areas, henceforth known as peripheral hospitals. There is one provincial referral hospital in each of the 20 provinces (*aimags*) of Mongolia (excluding Ulaanbaatar), which are further subdivided into *soums*, where hospitals mostly provide primary health care. Each questionnaire was directed to the head physician of the ICU or, if the hospital had no ICU, to the department caring for emergency and critically ill patients. Participants were informed that participation was voluntary and that the results of the study would be published in a scientific journal. We offered no incentives for completing the questionnaire. One and a half months after we mailed it, we contacted all physicians who had not responded and asked them to participate. Completed questionnaires were collected at the Central State University Hospital in Ulaanbaatar until the end of December 2009 and the results were analysed in the European study centre, located in Berne, Switzerland.

Questionnaire

The survey questionnaire, which was designed and based on the 2008 SSC guidelines,¹² contained 74 questions grouped into seven main categories: general information, hospital facilities, drugs, patient monitoring, laboratory tests, equipment and disposables. For the hospital facilities category, responses were classified as “yes”, “no” and “don’t know”, and for the remaining categories as “always”, “sometimes”, “never” and “don’t know”. The original study questionnaire in English (available from the corresponding author on request) was pretested

and pilot tested for ease of completion and inter-observer variability and translated into the Mongolian language. It had been used before in a cross-sectional survey conducted to evaluate resource availability for implementing the SSC in Africa. Separate from the questionnaire, respondents were also asked whether SSC guidelines were implemented in the management of patients with severe sepsis or septic shock in their hospital.

Outcome variables

Prior to the survey, the study investigators defined by consensus the hospital facilities, equipment, drugs and disposable materials required to implement individual SSC recommendations and suggestions (available from corresponding author on request).¹² For the SSC guidelines to be considered “implementable”, the corresponding resources had to be available “always”. Resources that were available “sometimes” or “never”, or whose availability was unknown to the respondents, were considered insufficient for implementation of the SSC guidelines. A secondary outcome variable was the percentage of the recommendations and suggestions included in the SSC guidelines that could be implemented at each hospital, based on responses to the questionnaire.

Statistical analysis

The primary objective was to assess the availability of resources needed to implement the SSC guidelines (recommendations and suggestions individually, as well as in their entirety) in Mongolian hospitals. A secondary objective was to evaluate the difference between central hospitals in the capital and peripheral hospitals in rural areas in terms of the capacity to implement all SSC guidelines (recommendations as well as suggestions).

Questionnaires were separated into those whose respondents were in central or peripheral hospitals. Questionnaires were manually entered into a centralized database. After random cross-checking, the database was re-checked by calculating the minimum and maximum values for each question to recognize entry errors. The SPSS software package version 13.0.1 (SPSS Inc., Chicago, USA) was used for statistical analysis. Simple frequencies based on the number of completed questions – some questions were not completed by all respondents – were calculated for all categorical data. Continuous

variables are presented as median values with interquartile ranges. Comparisons between groups were performed with the χ^2 (categorical data) or Mann–Whitney *U* test (continuous data), as appropriate. A *P*-value < 0.05 was considered to indicate statistical significance.

Results

Of the 44 questionnaires distributed, 38 (86.4%) were returned and could be statistically analysed. Questionnaires were returned by respondents in 20 central hospitals and 18 peripheral hospitals. Three questionnaires (7.9%) were only partially completed. The median number of missing responses in these questionnaires was 1 (IQR: 1–3). Table 1 summarizes the characteristics of the respondents and their hospitals.

One of 38 respondents (2.6%) stated that some of the SSC guidelines were implemented in his hospital. None of the other respondents claimed to follow the SSC guidelines, either in part or in full, when caring for septic patients in their hospitals. Table 2, Table 3 and Table 4 show the drugs, equipment and disposable materials that were available in each hospital for implementing the SSC guidelines. Equipment to measure body temperature and non-invasive blood pressure were the only resources that were available at all times in all responding hospitals. None of the respondents reported continuous access to piperacillin, carbapenem, dobutamine, activated protein C, or equipment to measure cardiac output or pulmonary arterial pressure at their hospital. The resources required to consistently implement all SSC recommendations/suggestions were not available in any Mongolian hospital (Table 5). The median percentage of implementable recommendations and suggestions did not differ between central and peripheral hospitals (Table 5).

Discussion

The findings of this nationwide survey confirm our hypothesis and indicate that the resources needed to consistently implement the latest SSC guidelines are unavailable in Mongolia. Our data reflect a dramatic, widespread shortage of the resources needed for the care of patients with severe sepsis and septic shock in Mongolia. Accordingly, only one respondent indicated that the SSC guidelines for the management of septic

patients had been implemented, at least to some extent, in his hospital. Although our findings do not shed light on why the SSC guidelines are not implemented in Mongolia, a lack of the necessary resources is thought to be at least partially responsible.

Contrary to our expectations and to the results of studies from low-income countries,¹⁶ resource availability did not differ between central and peripheral hospitals in Mongolia. This suggests that the resources needed to adequately manage septic patients are in short supply in hospitals located both in the capital city and in rural Mongolia. While this may still be a remnant of the centrally-run health system that existed in Mongolia before 1990, it could also reflect the fact that hospital resources were allocated equally throughout the country in recent times. Alarming, many respondents did not know whether specific tests and

Table 1. Respondent characteristics in nationwide survey to assess the availability of the resources needed to implement Surviving Sepsis Campaign guidelines in secondary and tertiary hospitals in Mongolia, 2009

Characteristic	No.	%
Specialty of respondent, mean no. and %		
Physician anaesthetist	36	94.7
Physician, other specialty	1	2.6
Other	1	2.6
Type of hospital, mean no. and %		
Regional/provincial	21	55.3
District	8	21.1
University/teaching	7	18.4
Other	2	5.3
Size of hospital		
Beds, no. and IQR	240	98–350
Hospital facilities available, mean no. and %		
Emergency department	32	84.2
Operating theatre	32	84.2
Intensive care unit	29	76.3

IQR, interquartile range.

Table 2. Availability of drugs needed to implement Surviving Sepsis Campaign guidelines in 38 secondary and tertiary hospitals in Mongolia, 2009

Material	Always		Sometimes		Never		Don't know	
	No.	%	No.	%	No.	%	No.	%
Oxygen	37	97.4	1	2.6	0	0	0	0
Antibiotic								
Ampicillin	36	94.7	2	5.3	0	0	0	0
Gentamycin	36	94.7	1	2.6	1	2.6	0	0
3rd/4th generation cephalosporin	25	65.8	12	31.6	1	2.6	0	0
Piperacillin	0	0	3	7.9	24	63.2	11	28.9
Carbapenem	0	0	8	21.1	19	50	11	28.9
IV fluids								
Crystalloids	35	92.1	3	7.9	0	0	0	0
Colloids	24	63.2	11	28.9	2	5.3	1	2.6
Blood products								
Red blood cells	24	64.9	13	35.1	0	0	0	0
Fresh frozen plasma (<i>n</i> =37)	21	56.8	10	27	6	16.2	0	0
Platelets (<i>n</i> =37)	9	24.3	17	45.9	11	29.7	0	0
Cardiovascular drugs								
Noradrenaline	1	2.6	9	23.7	27	71.1	1	2.6
Propofol	31	81.6	6	15.8	1	2.6	0	0
Succinylcholine	28	73.7	5	13.2	3	7.9	2	5.3
ND muscle relaxant	30	78.9	4	10.5	3	7.9	1	2.6
IV opiate/opioid	32	84.2	6	15.8	0	0	0	0
Diazepam	36	94.7	2	5.3	0	0	0	0
Midazolam	6	15.8	12	31.6	18	47.4	2	5.3
Other								
Insulin	32	84.2	6	15.8	0	0	0	0
Heparin or LMW heparin	29	76.3	9	23.7	0	0	0	0
H2 blockers (<i>n</i> =37)	30	81.1	5	13.5	2	5.4	0	0
Proton pump inhibitor	29	76.3	7	18.4	2	5.3	0	0
Activated protein C	0	0	0	0	33	86.8	5	13.2

H2, histamine receptor 2; IV, intravenous; LMW, low molecular weight; ND, non-depolarizing.

Table 3. Availability of equipment needed to implement Surviving Sepsis Campaign guidelines in 38 secondary and tertiary hospitals in Mongolia, 2009

Tests and equipment	Always		Sometimes		Never		Don't know	
	No.	%	No.	%	No.	%	No.	%
Diagnostic equipment								
X-ray	33	86.8	2	5.3	3	7.9	0	0
Ultrasound	37	97.4	1	2.6	0	0	0	0
Echocardiography	14	36.8	3	7.9	21	55.3	0	0
Laboratory tests								
Gram stains (<i>n</i> =37)	20	54.1	4	10.8	6	16.2	7	18.9
Microbiological cultures	23	60.5	8	21.1	5	13.2	2	5.3
Antibiotic sensitivities	22	57.9	8	21.1	6	15.8	2	5.3
Glycemia	35	92.1	3	7.9	0	0	0	0
Blood gases	4	10.5	5	13.2	24	63.2	5	13.2
Lactate	5	13.2	5	13.2	23	60.5	5	13.2
Blood count	36	94.7	1	2.6	1	2.6	0	0
Creatinine	36	94.7	2	5.3	0	0	0	0
Bilirubin	36	94.7	2	5.3	0	0	0	0
Prothrombin time/INR	19	50	8	21.1	10	26.3	1	2.6
Other coagulation tests	21	55.3	9	23.7	7	18.4	1	2.6
Monitoring equipment								
Body temperature	38	100	0	0	0	0	0	0
Non-invasive blood pressure	38	100	0	0	0	0	0	0
Invasive blood pressure	7	18.4	2	5.3	26	68.4	3	7.9
Oxygen saturation	35	92.1	3	7.9	0	0	0	0
Central venous pressure	12	31.6	13	34.2	11	28.9	2	5.3
Cardiac output	0	0	6	15.8	30	78.9	2	5.3
Pulmonary arterial pressure	0	0	5	13.2	31	81.6	2	5.3
Endtidal carbon dioxide	9	23.7	4	10.5	21	55.3	4	10.5
Other equipment								
Mechanical ventilator	28	73.3	4	10.5	6	15.8	0	0
Syringe pump	25	65.8	5	13.2	7	18.4	1	2.6
Fluid infuser	22	57.9	2	5.3	12	31.6	2	5.3
Peritoneal dialysis	1	2.6	2	5.3	34	89.5	1	2.6
Haemodialysis/haemofiltration	3	7.9	0	0	35	92.1	0	0

INR, international normalized ratio.

Table 4. Availability of disposable material to implement Surviving Sepsis Campaign guidelines in 38 secondary and tertiary hospitals in Mongolia, 2009

Disposable material	Always		Sometimes		Never		Don't know	
	No.	%	No.	%	No.	%	No.	%
IV cannula	27	71.1	8	21.1	3	7.9	0	0
IV fluid giving set	20	52.6	6	15.8	10	26.3	2	5.3
Urinary catheter	33	86.8	4	10.5	1	2.6	0	0
Nasogastric tube	33	86.8	5	13.2	0	0	0	0
Endotracheal tube	35	92.1	3	7.9	0	0	0	0
Oxygen face mask	34	89.5	4	10.5	0	0	0	0
Oxygen nasal cannula	34	89.5	4	10.5	0	0	0	0
Central venous catheter	16	42.1	12	31.6	9	23.7	1	2.6
Antithrombotic stockings	3	7.9	2	5.3	31	81.6	2	5.3

IV, intravenous.

Table 5. Percentages of implementable Surviving Sepsis Campaign recommendations/suggestions in 38 secondary and tertiary hospitals in Mongolia, 2009

Recommendations/suggestions ^a	Mongolia (n=38)		Central hospitals (n=20)		Peripheral hospitals (n=18)		P-value
	Median %	IQR	Median %	IQR	Median %	IQR	
All	52.8	45.8–67.4	52.2	46.3–68.3	52.8	44.1–61.5	0.68
Level I, recommendations	68.0	58.0–80.5	70.0	58.5–82.0	67.0	57.5–74.0	0.48
Level IA and IB recommendations	75.0	62.5–83.3	79.2	66.7–86.5	75.0	61.5–83.3	0.24
Level IC and ID recommendations	59.6	52.9–73.1	59.6	51.0–78.8	59.6	52.9–67.3	0.85
Level II, suggestions	43.5	34.8–57.6	43.5	35.9–59.8	41.3	33.7–57.6	0.53

IQR, interquartile range.

^a Recommendations refer to interventions whose desirable effects clearly do or do not outweigh the risks. Thus, recommendations should be followed by physicians in most situations. Suggestions, on the other hand, are formulated when the relation between an intervention's desirable and undesirable effects is less clear. A physician can choose to follow a suggestion but is not required to do so. The level indicates the strength of the clinical evidence supporting the recommendations/suggestions, with level IA being supported by the strongest evidence and level II by the weakest.

techniques such as Gram staining or blood gas analysis were available in their hospital. Since only single physicians caring for acutely or critically ill patients were approached in each hospital included in this survey, this could reflect either a shortage of resources or, alternately, a lack of knowledge among some respondents about contemporary sepsis treatment.

The SSC's proposals include recommendations as well as suggestions.¹² A recommendation is made when an intervention's desirable effects clearly do or do not outweigh its risks. Thus, recommendations should be followed by physicians in most situations. Suggestions, on the other hand, are formulated when the relation between an intervention's desirable and undesirable effects is less clear. A physician can choose to follow a suggestion but is not required to do so. On average, respondents reported having the resources needed to implement recommendations more frequently than the resources required to implement suggestions (68 versus 43.5%, respectively; $P < 0.001$). Although 25% of the SSC recommendations are passive and do not require resources, this finding suggests that at least two-thirds of evidence-based sepsis treatments can be implemented in secondary and tertiary hospitals in Mongolia. Thus, introducing sepsis guidelines adapted to the resources available locally should make it possible to implement important aspects of evidence-based sepsis management in Mongolia and other middle- or low-income countries. Such adapted guidelines for sepsis management in resource-poor settings should further strengthen individual health-care systems.

The results of this survey confirm the findings of a previous study indicating that intensive care medicine was an

under-resourced and underdeveloped medical specialty in Mongolia.⁸ The main problems encountered were insufficient training of staff as well as a lack of medical equipment, disposables and drugs.⁸ Similar shortages of resources to care for acutely and critically ill patients have been reported from other middle- or low-income countries.^{16–18,21–23} Such findings and those of the present survey suggest that other international guidelines cannot be fully implemented in Mongolia owing to a lack of the resources required. Although our findings would appear to be intuitively deducible, our study is the first to show that a lack of resources may prevent international treatment guidelines for intensive care medicine from being implemented in non-high-income countries.

This study is a self-reported survey on resource availability and did not evaluate the clinical practice of sepsis care in Mongolia. Although scant data are available on the management of patients with severe sepsis or septic shock in Mongolia, one study reported extremely high case fatality rates for sepsis and septic shock (20.8 and 80%, respectively).⁹ Comparably high fatality rates for sepsis and septic shock have been observed in other middle- and low-income countries. In a cohort study from Tunisia that included 100 septic shock patients, the overall fatality rate was 82%.²⁴ Similarly, fatality rates of 80% and 92%, respectively, were found in patients with severe sepsis in tertiary care centres in Pakistan²⁵ and Turkey²⁶. Cheng et al. observed a case fatality rate of 90% in severe sepsis patients suspected of having melioidosis in Thailand.²⁷ The wide-ranging lack of resources revealed by the present survey suggests that several potentially life-saving interventions

for patients with severe sepsis cannot be implemented in Mongolia. Although no conclusion on cause and effect can be drawn from our results, the lack of the necessary resources to implement SSC guidelines in Mongolia is in all likelihood contributing to the high case fatality rates from sepsis and septic shock.⁹

Our study has several limitations. Although the survey response rate was high, not all physicians to whom the questionnaire was sent responded. Thus, our survey did not yield data from all secondary and tertiary hospitals in Mongolia. It is therefore possible that the resources required to implement the SSC guidelines are available in hospitals that were not assessed in the present survey. Yet data from the tertiary hospitals that replied to the survey indicate that resources were in short supply, although high-skill surgery and anaesthesia services are provided. Our survey did not include primary care hospitals either. Since primary hospitals in Mongolia are rarely equipped or staffed to provide care for septic and other severely ill patients, the critically ill are often transferred to provincial referral hospitals, from where they are subsequently sent to tertiary hospitals in Ulaanbaatar. Since our survey did not include primary care hospitals, no conclusions can be drawn about such hospitals in Mongolia. However, the availability of resources in primary care hospitals is likely to be even more limited than in secondary or tertiary hospitals. This situation is particularly devastating given that long distances, the lack of a nationwide ambulance system and the extreme weather conditions in Mongolia make it difficult to transport patients between hospitals, particularly when they are critically ill.²³

Certain other limitations need to be kept in mind when interpreting the results of this survey. First, although the questionnaire had undergone pilot testing and had been used in another setting before, it had not been assessed for test-retest reliability. This, in addition to the fact that the clinical sensitivity of the survey instrument was not determined, limits the validity of the survey results.²⁸ Second, our survey explored the availability of material resources but not of health-care workers. A shortage of sufficiently trained health-care providers is a well recognized threat to appropriate patient care in middle- and low-income

countries.^{23,29} Even in high-income countries, inadequate staffing can be a barrier to implementing the SSC guidelines.³⁰ Additionally, the questionnaire did not assess the availability of the resources necessary to manage children with sepsis. Since specially-sized disposable materials and equipment are required, the resources needed to care for children with sepsis are even more rarely available in Mongolia.

In conclusion, the findings of this self-reported, nationwide survey strongly suggest that the most recent international SSC guidelines cannot be implemented in Mongolia owing to a dramatic shortage of hospital facilities, equipment, drugs

and disposable materials. Further studies are needed on current awareness of the problem, the development of national reporting systems and guidelines for sepsis care in Mongolia, the quality of diagnosis and treatment and the training of health-care professionals. ■

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الملخص

مسح على نطاق القطر حول توافر الموارد لتنفيذ الدلائل الإرشادية الحالية الخاصة بالإنتان في منغوليا

مجتمعة هي 52.8% (المجال بين الشريحتين الربيعيتين 45.8-67.4%)، وكانت النسبة الخاصة بالتوصيات القابلة للتنفيذ فقط 68% (المجال بين الشريحتين الربيعيتين 58-80.5%)، أما نسبة الاقتراحات القابلة للتنفيذ فقط فكانت 43.5% (المجال بين الشريحتين الربيعيتين 34.8-57.6%). ولم تختلف هذه النسب بين المستشفيات الواقعة في العاصمة والمستشفيات في المناطق الريفية.

الاستنتاج تدل نتائج هذه الدراسة بأن أحدث الدلائل الإرشادية الخاصة بالإنتان لا يمكن تنفيذها في منغوليا بسبب القصور الحاد في التسهيلات، والمعدات، والأدوية، والمواد الوحيدة الاستخدام الضرورية في المستشفيات. ويحتاج الأمر إلى إجراء المزيد من الدراسات حول مدى الوعي الحالي بهذه المشكلة، وتطوير النظم الوطنية للتبليغ، ووضع دلائل إرشادية خاصة برعاية حالات الإنتان في منغوليا، علاوة على أهمية جودة التشخيص والمعالجة وتدريب مهنيي الرعاية الصحية.

الهدف تقييم ما إذا كانت المستشفيات الثانوية والثالثية في منغوليا تمتلك الموارد الضرورية لتنفيذ الدلائل الإرشادية لعام 2008 والخاصة بالإنتان. الطريقة قام الباحثون بإجراء مسح على مستوى القطر، في منغوليا، للحصول على إجابات رئيسية معرفية من خلال إرسال استبيان مكون من 74 بنداً إلى كبار الأطباء العاملين في وحدات الرعاية المكثفة أو في أقسام الطوارئ والمستشفيات الثانوية والثالثية البالغ عددها 44 مستشفى تتعامل مع المرضى من ذوي الحالات الحرجة. ودار الاستبيان حول توافر التسهيلات، والمعدات والأدوية والمواد الوحيدة الاستخدام في المستشفيات، والضرورية لتنفيذ الدلائل الإرشادية الخاصة بالإنتان. وقد استخدمت أيضاً طرائق وصفية من أجل التحاليل الإحصائية، وأجريت مقارنات بين المستشفيات المركزية والمستشفيات الطرفية باستخدام الاختبارات غير المتماثلة. الموجودات بلغ معدل الاستجابة 86.4% (44/38). ولم تمتلك أي مستشفى بمنغوليا الموارد اللازمة لتنفيذ الدلائل الإرشادية الخاصة بالإنتان بصورة مستمرة. وكانت النسبة الوسطية للتوصيات والاقتراحات القابلة للتنفيذ

Résumé

Enquête nationale sur la disponibilité des ressources pour l'application des recommandations sur la septicémie en Mongolie

Objectif Évaluer si les hôpitaux secondaires et tertiaires de Mongolie disposent des ressources nécessaires à l'application des recommandations de la Surviving Sepsis Campaign (SSC) de 2008.

Méthodes Pour obtenir des réponses de témoins privilégiés, nous avons mené une enquête nationale en envoyant un questionnaire composé de 74 questions aux médecins-chefs des unités de soins intensifs ou des service des urgences et aux grands malades de 44 hôpitaux secondaires et tertiaires de Mongolie. Ce questionnaire portait sur la disponibilité des locaux, de l'équipement, des médicaments et du matériel jetable hospitaliers, nécessaires à l'application des conseils de la SSC. Des méthodes descriptives ont été utilisées pour l'analyse statistique. Les comparaisons entre les hôpitaux centraux et périphériques ont été faites à l'aide de tests non paramétriques.

Résultats Le taux de réponse a atteint 86,4% (38/44). Aucun hôpital mongol ne disposait des ressources nécessaires à l'application

systématique des recommandations de la SSC. Le pourcentage moyen des recommandations et suggestions combinées applicables était de 52,8% (intervalle interquartile, IQR: 45,8 à 67,4%); des recommandations applicables seulement, 68% (IQR: 58,0 à 80,5%); et des suggestions applicables seulement, 43,5% (IQR: 34,8 à 57,6%). Ces pourcentages ne différaient pas entre les hôpitaux de la capitale et ceux des zones rurales.

Conclusion Les résultats de cette étude indiquent fortement que les recommandations les plus récentes de la SSC ne peuvent être appliqués en Mongolie en raison de la pénurie de locaux, d'équipement, de médicaments et de matériel jetable hospitaliers qui sont indispensables. Des études supplémentaires sont requises sur la sensibilisation actuelle au problème, sur le développement de systèmes nationaux de reporting et sur les conseils pour le traitement des états septiques en Mongolie. La qualité du diagnostic et des soins et la formation des professionnels de santé doivent également être étudiées de manière plus approfondie.

Resumen

Encuesta nacional sobre disponibilidad de recursos para aplicar las directrices actuales para el manejo de casos de septicemia en Mongolia

Objetivo Valorar si los hospitales generales y de atención especializada de Mongolia disponen de los recursos necesarios para poner en práctica las directrices de la Campaña “Sobrevivir a la septicemia” (CSS) de 2008.

Métodos Con el fin de obtener respuestas de informantes clave, hemos realizado una encuesta nacional enviando un cuestionario con 74 apartados a los jefes médicos de las unidades de cuidados intensivos o de los departamentos de urgencias y de pacientes en estado crítico de 44 hospitales generales y de atención especializada de Mongolia. El cuestionario indagaba acerca de la disponibilidad en los hospitales de las instalaciones, los equipos, los medicamentos y el material desechable necesarios para poner en práctica las directrices de la CSS. Se emplearon métodos descriptivos para el análisis estadístico. Se establecieron comparaciones entre los hospitales centrales y los periféricos empleando pruebas no paramétricas.

Resultados El índice de respuesta fue de un 86,4% (38/44). Ninguno de los hospitales de Mongolia disponía de los recursos necesarios para aplicar

las directrices de la CSS de forma sistemática. El porcentaje medio de las recomendaciones y sugerencias que en conjunto podían ponerse en práctica fue de un 52,8% (amplitud intercuartil, AIC: 45,8–67,4%); el de sólo las recomendaciones que se podían ejecutar, de un 68% (AIC: 58,0–80,5%); y el de sólo las sugerencias que se podían aplicar, de un 43,5% (AIC: 34,8–57,6%). Estos porcentajes no variaron entre los hospitales situados en la capital y aquellos que se encontraban en las zonas rurales.

Conclusión Los resultados de este estudio demuestran que las recientes directrices de la CSS no pueden ponerse en práctica en Mongolia debido a la carencia alarmante de instalaciones, equipos, medicamentos y material desechable necesarios en los hospitales. Será necesario realizar otros estudios sobre el conocimiento actual del problema, el desarrollo de sistemas para la notificación de casos y de directrices para la atención médica de la septicemia en Mongolia, y sobre la calidad del diagnóstico, el tratamiento y la formación de los profesionales sanitarios.

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