Short Stay Units dependent on Emergency Department

Sir,

We have read the article by Gonzalez-Armengol et al. "Activity of a short stay unit in the emergency department of a tertiary hospital: four years experience"[1], published in April 2009, and we would like to contribute with the experience of our centre, which is also a tertiary hospital.

Between 1997-2007, the short stay unit stay has functioned during 59 months (during the winter period and in the last two years, 11 months a year), made 11,245 admissions of patients with a mean age of 74.5 years, of whom 39.8% were aged 80 years, and with a slight predominance of men (52.6%). The final destination was: discharge home for 77.7%, internal transfer due to poor evolution 5.9%, home hospitalization 5.3% (available only from 2002), admission to social-health centres 5.2% and a mortality of 5.9%, which is high but attributable to the large number of critical patients. According to diagnostic group (GRD), the most frequent were Groups 541, 88 and 97 (respiratory disorder, obstructive pulmonary disease, chronic bronchitis and asthma) with 58% followed by and Groups 127, 87 and 544 (heart failure, lung edema) with 22%. Our unit only serves patients referred from the emergency department and therefore only has a therapeutic, not diagnostic, function. Our experience confirms that such units constitute a high quality alternative to conventional hospitalization, with a high degree of therapeutic resolution[2] and patient satisfaction[3].

We firmly believe that the optimal operation of this type of hospitalization unit is a consequence of its dependence on emergency department physicians, which implies an affirmative answer to Dr. Salazar question in his Editorial article "Are ED physicians good value for money?[4].

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Comment on isolation precautions in the emergency department

Sir,

First, we would like to congratulate Ortega et al[1] for their comprehensive review of isolation precautions in the emergency department (ED) published in this journal, which systematically analyze such precautions in specific situations of patient consultation in a hospital ED. We would only like to mention one of the elements that may prevent the early transmission of multidrug-resistant bacteria, not covered in this work. Nosocomial infection monitoring programs which include computer alert systems can detect all cases of patients colonized or infected by multidrug-resistant bacteria[2,3], provided that they are included in the database after the isolation of these germs on previous admissions. This allows early implementation of isolation measures required for each case and avoids the impact that the usual delay by the ED has on the risk of nosocomial transmission of infectious diseases[4].

Nasal carriers of methicillin-resistant Staphylococcus aureus (MRSA) can maintain infectious state during prolonged periods of time after hospital discharge[5]. Thus, many experts recommend universal screening for all patients admitted to hospital[6]. This would entail a significant burden of work in the ED and has not been shown to reduce the rate of nosocomial MRSA in surgical patients admitted to centres with a relatively low incidence of infection by MRSA[7].

Nosocomial infection surveillance which includes a computer alert system was first implemented at our hospital in 2006. For this, a database was created connected with the admissions department which registers all new cases of multi-

drug-resistant organisms. Thus, when one of these patients visits the ED, an alert is immediately activated and precautionary isolation labelled "MR-C" (MDR-contact) or "MR-CG" (MDR-contact droplets) is printed on the hospital forms of the patient. Since the implementation of this warning system, the total number of new cases of MRSA in our hospital (105) has descended (40 in 2006, 39 in 2007 and 26 in 2008), which shows a trend to lower incidence of MRSA.

We would stress the utility of computerized early warning systems in the ED for the detection of patients colonized or infected by multidrug-resistant bacteria, and the need to implement isolation measures necessary for each case.

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Thrombolysis in acute ischemic stroke

Sir,

In the December 2008 issue of EMERGENCIAS, Gómez-Choco and Obach review thrombolytic therapy in ischemic stroke[1]. Despite the controversy initially raised, thrombolytic treatment in selected patients with ischemic stroke has been shown to be superior over placebo; the current guideline sets a limit of less than three hours for initiation of the treatment[2].

At present, the percentage of patients undergoing such treatment is limited, as the authors indicate with a rate of around 5%. There are several reasons for this. The three main reasons are: strict inclusion criteria (to limit complications of such treatment), evolution time over 3 hours before arrival at the hospital, and lack of facilities to provide this treatment at many hospitals in our country. The hospitals offering this therapeutic option are those with stroke units, where treatment is indicated by the neurologist on duty.

Imaging using computed tomography (TC) is currently available at the vast majority of hospitals in our country, which is an essential step before administration of treatment, but there few centres with a 24 h neurologist or a stroke unit. In order to be able to offer this treatment to a greater percentage of the population, an option to be considered is specific training of ED physicians for the indication of thrombolytic therapy in stroke patients. Despite reservations about the comparison, an important part of the success of myocardial reperfusion therapy in patients with acute infarction with ST-segment elevation is the early administration of fibrinolytic treatment without the need for a cardiologist or internist.

Since the time factor is crucial for the application of thrombolytic therapy in patients with acute stroke, specific training on patient selection and application of this therapy should not be limited to a single specialty, but should be for all those professionals who attend these patients initially, regardless of the fact that they may subsequently require specialist attention in a stroke unit or intensive care unit.

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Hospital Paediatric Emergencies

Sir,

After reading the work of Luaces Cubells et al we believe some qualifications and observations are

necessary[1]. First, although the scope of the study stated in the objectives was the study of paediatric emergency services, the study title seems to correspond to a broader scope: the paediatric population with medical emergencies. Perhaps it would have been more appropriate to include the word hospital and, perhaps the term "third-level or referral hospital". We do not wish to suggest criticism of the reviewers and the Editorial Board, but rather to emphasize that not only paediatricians attend paediatric emergencies. Primary care physicians, third level hospital physicians and obviously ED physicians are probably responsible for most paediatric emergency attention in our country.

There is no doubt that a paediatrician with the appropriate training in emergencies is perhaps the ideal physician to deal with these patients. However, no specific training exists for this[2]. Furthermore, obviously not all Spanish children live in an area covered by a tertiary hospital, nor are these medical emergencies usually so severe as to require a hospital visit[3]. It is thus likely that in cities with hospital paediatric emergency services, we are badly training future users of adult EDs and their parents[4].

In this respect, as the authors point out, it is not surprising that there is an ever-increasing number of hospital paediatric emergency visits without a corresponding increase in percentage of cases that are actually emergencies[1].

We agree with the authors that for hospital paediatric emergency attention, it is necessary to improve quality standards, implement structured triage, full-time professionals, computerization and coding, and of course professionalization, ie establishment of the specialty. On this last point, perhaps the model to follow is that of the specific training established in the law LOPS[5]. It may be recalled here that in U.S.A. there has been a subspecialty of paediatric emergency medicine since 1992 under the auspices of the two specialties providing access to this subspecialty: Paediatrics and Emergency Medicine. Until 2004, a complementary training period of two years was required6. After that date the training period was extended to three years, although for re-certification of professional competence (such as LOPS aims to develop) a period of 7 years for paediatricians and 10 years for ED specialists is required[7,8]. Similarly, the recent work of Mintegi et al observed that only 24% of those responsible for paediatric emergency hospital services had specific accredited training in this field[9].

We found it curious to read that SEMES is the society that covers professionals responsible for attending emergencies in the adult population. Perhaps this was a lapsus, since it does not correspond with the statutory reality of this scientific society or with the daily work of many of its members, as stated at the outset.

In summary, children with urgent pathology must be attended in any geographic area and emergency care unit by properly trained professionals, for which we need the specialty in Emergency Medicine, with specific training in paediatric emergencies and logically collaboration between emergency physicians and paediatricians and their respective scientific societies.

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Authors' Reply

Sir,

First we want to thank Dominguez Bencomo et al for reading our work and their interest in it[1].

Regarding their comments, we believe it appropriate to qualify some aspects. Firstly, as these authors admit, in the objectives and methodology it is clearly specified that the interest is focused on knowing what happens in the hospital emergency department. Therefore, the survey was specifically directed at those responsible for the participating centres. Naturally we know the reality of care in our setting and that not only paediatrician specialists attend paediatric emergencies. For the present work we did not wish to incorporate information from this important field to avoid confusion and facilitate the presentation of the results. However, we agree with Domingo Bencomo et al that the title could be more explicit.

We must disagree about the lack of specific training in paediatric emergencies. As Dominguez Bencomo et al should know, very few paediatric specialties are recognized as such, but the Spanish Association of Paediatrics (AEP)[2] recognizes several areas of specific paediatric training, among which is included paediatric emergencies. In 2002 an editorial in the official AEP journal clearly described the characteristics and objectives of this specialty[3]. Since 2004 there have been a significant number of professionals who have officially obtained the above-mentioned ASP training.

On the website of the Sociedad Española de Urgencias de Pediatría[4] (SEUP) (www.seup.org) one can find a document entitled "Standards of accreditation of paediatric emergencies" where, in addition to defining structural and functional aspects of paediatric emergency services, is specified a training program in paediatric emergencies.

There is also a 2-year masters course in paediatric emergencies offered by the University of Barcelona which includes rotation for all the disciplines involved in this area. In terms of bibliography, there are currently five paediatric emergency manuals published by five hospitals and a treaty drawn up by emergency paediatricians throughout Spain[5].

Furthermore, this site displays the activities of various SEUP working groups and various publications, such as quality indicator manuals[6] or diagnostic coding, which are most useful as an assessment tool to determine the adequacy of the results of care. Also worthy of mention are the APLS and PEEP courses, officially endorsed by the American Academy of Paediatrics, which constitute the mainstay of SEUP teaching and confirm the existence of a program with its own content for both hospital (APLS) and out-of-hospital (PEEP) paediatric emergency training. Finally we would mention the fourteen annual meetings since 1994 of the specialty with an average of 500 participants.

It is therefore evident that there is a robust structure supporting specific training in Paediatric Emergency Medicine and the professionals that exercise this, aware that "not all Spanish children live in an area covered by a tertiary hospital" and seeking the maximum level of care, we are happy to assume our teaching work for professionals working in other areas and attend paediatric emergencies so that they have our full support and the best possible preparation.

The possibility that "we are badly training future users of adult EDs" is just that, "a possibility"; however it is evident that there are no barriers or obstacles for current users requiring "urgent" attention whenever they deem it necessary, and therefore as healthcare professionals we must adapt to what society demands and insofar as our limited means allow, advise the user how to use medical resources in the most efficient manner. It is up to others to make decisions on appropriate policies to regulate the flow and circuits of users, through the channels they consider most appropriate.

We fully agree on the issue of professionalism of the specialty suggested by Dominguez made Bencomo et al. Surely the important thing is that the professionals caring for a paediatric patient is adequately trained; if in the near future the specialty of Emergency Medicine is recognized in our country, it is clear that the EM specialist should also be trained in paediatric emergencies and at the end of such training will be qualified to assume such attention. Thus the need for the learning and teaching structure mentioned earlier. Naturally, the professional with previous specialist paediatric training would be a quality addition to the to specialization in paediatric emergencies.

We understand and agree that SEMES is not the only society for professionals attending emergencies, but it is clearly a society whose primary and sole objective is devoted to emergency attention, unlike other societies with wider goals rightly including emergency attention.

Finally, we completely agree with the last paragraph of the letter which supports the creation of the specialty of Emergency Medicine and with the essential cooperation between professionals who manage emergencies regardless of the age of their patients or the scope of their work, as mentioned above.

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Interhospital land transfer with intra-aortic balloon counterpulsation

Sir,

Intra-aortic balloon counterpulsation (IABP) is the method used to provide mechanical circulatory support in the treatment of potentially reversible severe cardiac dysfunction. Among other conditions, it is indicated for shock associated with myocardial infarction and other complications of intractable cardiac ischemia, with or without infarction. The device employs a standard balloon catheter, a semi-flexible double lumen tube and a central lumen that can be used for introducing a guide wire, contrast dye or blood pressure monitor. It is approximately 90 cm long, has an anti-thrombogenic area and a capacity ranging from 8 to 40 ml. The external control console enables synchronization between the pump and heart action by a sensing circuit linked to an electrocardiogram in the R wave. The hemodynamic effects produced by counterpulsation are: 1) reduction of cardiac work by decreasing afterload, 2) increased cardiac output, decreasing resistance to ventricular ejection, 3) improvement of coronary artery perfusion by elevating diastolic pressure, 4) increased myocardial oxygenation by reducing oxygen demand and increasing supply, and 5) maintenance of systemic perfusion. This study describes the land transfer of two patients with cardiogenic shock by ventricular dysfunction secondary to ischemic heart disease, who were candidates for heart surgery.

The two patients were transferred during the period from 8 to 15 February 2008, with an average transfer time between hospitals of 90-100 minutes, without complications. In both cases, IABP was used with ECG monitoring, high-flow oxygen mask, hemodynamic support with vasoactive drugs with dopamine perfusion and anticoagulation with sodium heparin. Both cases were accompanied by a cardiologist for the management and control of IABP. The first patient, aged 51, presented cardiogenic shock after acute myocardial infarction refractory to medical treatment. During the transfer he was conscious, with blood pressure (BP) 100/57 mmHg, sinus rhythm at 110 beats per minute (bpm), 23 breaths per minute (bpm) and oxygen saturation ($satO_2$) of 98%. Heartbeat / device fill rate was 2/1. The second patient, aged 59 years, also presented cardiogenic shock due to ischemic heart disease affecting three vessels with severe stenosis of the distal vessels and significant ventricular dysfunction. For the transfer he was sedated with 3 mg midazolam due to his claustrophobia; he was breathing spontaneously and had BP of 95/60 mmHg, 22 bpm, sinus rhythm 84 bpm, and satO2 96%. The heartbeat/device fill rate was 3/1.

Possible complications in these patients include ischemia, bleeding, aortic dissection, renal embolism or other minor complications including infections, paresthesia or hematomas[1]. In our two patients there were no complications, which coincides with other series with more patients[2,3]. During the transfer of this type of patient, several aspects must be considered[4]: first, strict monitoring of the patient's electrocardiogram, both on the electrocardiography monitor and on the IABP console itself. Second, the two waves of recording must be matched with each other and with the patient's own pulse. Third, monitoring of the limb where the IABP is inserted to identify temperature, colour, distal pulses and signs of possible bleeding. The patient should be advised not to move this limb at all. Fourth, ensure that the point of insertion is secure and aseptic, without any bleeding. Fifth, continuous assessment of neurological, respiratory and hemodynamic status of the patient is necessary. In cases where mechanical ventilation is required, oxygenation should be monitored by indirect oxygen saturation and proper ventilation by capnography curve. Sixth, for BP control during transfer, in the absence of invasive pressure, the measures should be performed on different limbs. Seventh, check the ratio of heartbeat/device fill rate, which may range from 3/1 to 1/1, and that the entire system is intact, with tight, leak-free connections. Eighth, for the transfer, the helium canister should be at least two-thirds full, or else have a replacement and the tools necessary for replacement. Finally

and above all, during the transfer of such a patient, the greatest care must be taken to ensure no accidental disconnection of the system or detachment of the catheter. The insertion point and the device console must move in tandem, without jerking any point of the system, paying special attention when raising or lowering the patient from the advanced life support unit or bed. As for non-medical factors, ambulance speed should be moderate (between 50 and 70 km/h) and constant to avoid pathophysiological changes, so police escort is especially helpful in these circumstances.

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"Stayin Alive", interpreted by the Bee Gees has the right beat for saving lives

Sir,

On 17 and 18 October 2008, various social media reported that the University of Illinois (USA) had conducted an investigation showing that the song "Stayin Alive" performed by Bee Gees, has the right beat for saving lives[1].

We greatly welcome this because it reinforces the value of our studies presented at conferences and scientific congresses advocating use of the metronome as a teaching tool in cardiopulmonary resuscitation (CPR)[2] and use of a song with 104 beats-per minute (bpm) for maintaining the speed of chest compressions (CC)[3].

This latest study, which coincides with that conducted by David Matlock of Illinois University[4], indicates that adapting to the pace of 100 CC per minute (cpm) is not always simple because individual factors and social pressure hinder the correct

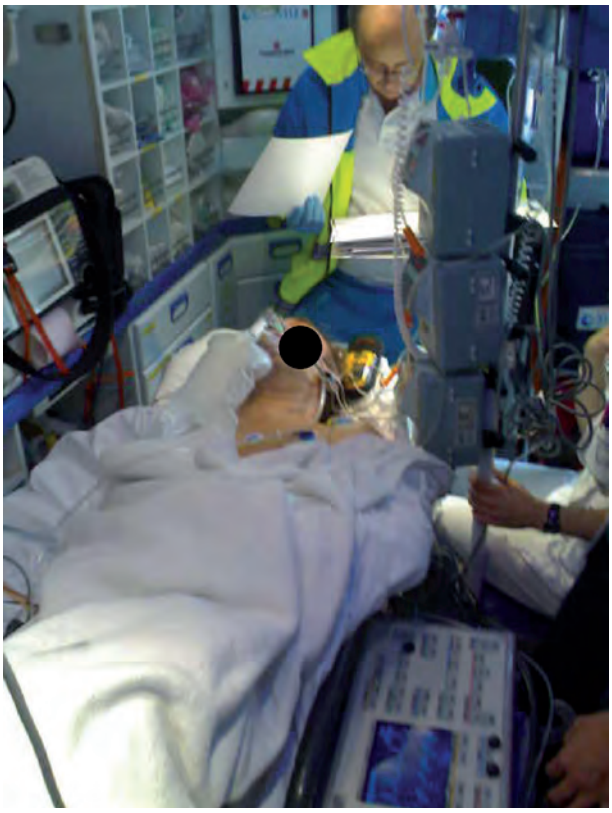

Figure 1. Photograph showing the transfer of a patient together with the intra aortic balloon pump.

administration of CC and lead to loss of compression rate. The results of an experiment performed in training of our staff showed that, at the beginning of CPR, the rescuers administered CC at an excessive rate. This causes premature exhaustion, prevents the thorax from completely regaining its original position and, therefore, does not generate adequate blood flow for survival and avoidance of post-arrest sequelae. Our group proposed using the "chotis" (although a rescuer can always any music of choice with this rate) as a musical form with 104 bmp that ensures the regularity and measurement of CC as indicated in the new CPR recommendations. It also guarantees contention on the frequency of CC by the rescuer and is easy to remember.

For CC to be effective, the American Heart Association (AHA) recommend regular, firm compressions applied at 100 cpm, allowing the chest to regain its normal position[5]. Like AHA instructional videos for CPR by lay people6 that use songs to mark the rate of CC, "El Pichi" or other songs with the same bpm could fulfil this function in CPR. We therefore recommend the use of this simple method for CPR and the teaching of this technique.

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