Patterns of hospital transfer for self-poisoned patients in rural Sri Lanka: implications for estimating the incidence of self-poisoning in the developing world

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Objectives Most data on self-poisoning in rural Asia have come from secondary hospitals. We aimed to: assess how transfers from primary to secondary hospitals affected estimates of case–fatality ratio (CFR); determine whether there was referral bias according to gender or poison; and estimate the annual incidence of all self-poisoning, and of fatal self-poisoning, in a rural developing-world setting.

Methods Self-poisoning patients admitted to Anuradhapura General Hospital, Sri Lanka, were reviewed on admission from 1 July to 31 December 2002. We audited medical notes of self-poisoning patients admitted to 17 of the 34 surrounding peripheral hospitals for the same period.

Findings A total of 742 patients were admitted with self-poisoning to the secondary hospital; 81 died (CFR 10.9%). 483 patients were admitted to 17 surrounding peripheral hospitals. Six patients (1.2%) died in peripheral hospitals, 249 were discharged home, and 228 were transferred to the secondary hospital. There was no effect of gender or age on likelihood of transfer; however, patients who had ingested oleander or paraquat were more likely to be transferred than were patients who had taken organophosphorus pesticides or other poisons. Estimated annual incidences of self-poisoning and fatal self-poisoning were 363 and 27 per 100 000 population, respectively, with an overall CFR of 7.4% (95% confidence interval 6.0–9.0).

Conclusion Fifty per cent of patients admitted to peripheral hospitals were discharged home, showing that CFRs based on secondary hospital data are inflated. However, while incidence of self-poisoning is similar to that in England, fatal self-poisoning is three times more common in Sri Lanka than fatal self-harm by all methods in England. Population based data are essential for making international comparisons of case fatality and incidence, and for assessing public health interventions.

Keywords Poisoning/epidemiology; Suicide, Attempted/trends; Referral and consultation; Sri Lanka (*source: MeSH, NLM*).

Mots clés Intoxication/épidémiologie; Tentative suicide/orientations; Consultation pour avis expert; Sri Lanka (*source: MeSH, INSERM*).

Palabras clave Envenenamiento/epidemiología; Intento de suicidio/tendencias; Remisión y consulta; Sri Lanka (*fuente: DeCS, BIREME*).

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Voir page 281 le résumé en français. En la página 281 figura un resumen en español.

Introduction

Intentional self-poisoning is common in many parts of the world.[1] However, its case–fatality ratio (CFR) differs markedly between industrialized and developing worlds.[2] For every 1000 self-poisoning patients admitted to European hospitals, fewer than five die.[3] For every 1000 admitted to rural Asian hospitals, 100–200 die.[4]

Self-poisoning has been well researched in Sri Lankan secondary district hospitals over the past 25 years.[5–15] Several studies have identified pesticides and yellow oleander seeds (containing cardiotoxic cardenolides[16,17]) as the most commonly ingested poisons in Sri Lanka and reported CFRs range between 6.7% and 23.7%.[7,10] The high CFR in Sri Lanka seems to be due to the ready availability of poisons that are more toxic than the poisons typically ingested in industrialized countries.[14]

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The CFRs reported in the cited Sri Lankan studies[5–15] are higher than the national CFR reported by the Sri Lankan Ministry of Health — 3.9% in 2002.[18] One reason is likely to be double counting of patients admitted to rural peripheral hospitals and then transferred to a secondary hospital.[19] A second explanation might be that mildly poisoned patients are admitted to peripheral hospitals but not then transferred, raising the CFR in the secondary hospital because of the more severe case mix. Thus far, no studies have investigated the management and transfer of self-poisoned patients within a defined geographical area of an Asian country.

In this study, we aimed to determine the pattern of patient transfer between hospitals of one Sri Lankan district to establish how these transfers influenced the CFR noted in the secondary hospital. We also aimed to assess whether there was bias according to gender or poison in the referral patterns, and to use the data to estimate the annual incidence of all self-poisoning, and of fatal self-poisoning, in this rural developing-world setting.

Methods

The study took place in Anuradhapura District, North Central Province (NCP), as part of a long-term cohort study of patients aged more than 11 years with acute self-poisoning admitted to the adult medical wards of Anuradhapura General Hospital.

At the 2001 census, the district had a population of 746 466 people, with 45.6% under the age of 25 years. The district has 34 peripheral health units with inpatient beds that all transfer poisoned patients to Anuradhapura General Hospital (a 1300-bed secondary hospital with an intensive care unit) for further management. In particular, patients are transferred for mechanical ventilation for pesticide poisoning and cardiac pacing or anti-digoxin antitoxin for oleander poisoning.

We obtained data on the official number of patients admitted for poisoning to hospitals in Anuradhapura District from July to December 2002 from the Medical Statistician at the Medical Statistics Unit, Colombo.

During the study period from 1 July to 31 December 2002, all patients admitted to the adult medical wards of Anuradhapura hospital with a history of self-poisoning were seen by study doctors on admission. The medical wards admit patients aged more than 11 years. Staff prospectively recorded patients' personal data together with information on the poison ingested, treatment, and outcome. This study was stopped due to staffing problems for three short periods (24 days in total) during the 6-month study period; we subsequently did careful retrospective audits of the hospital and ward admission registers and hospital death register to identify any patients admitted to the hospital during the study period who were not seen by the study doctors.

In the first half of 2003, we did a retrospective audit of all medical records for patients aged more than 11 years admitted to 17 of the 34 peripheral hospitals in the district during the study period. We chose the 17 peripheral hospitals by ordering the 34 hospitals according to size (i.e., by number of beds) and pairing consecutive facilities on the size-ranked list. We then used a coin toss to randomly select one hospital from each pair.

As part of the audit, cases were identified by manually searching all the medical records of all of the 17 hospitals for the 6-month study period. We have previously found the hospital *International classification of diseases and related health problems,* 10th revision (ICD-10) based record system to contain inaccuracies[19] and therefore we chose to manually check every ticket rather than rely on official hospital records. Data on patient details, poisoning, and outcome were extracted from each record.

We generated a list of patients admitted with self-poisoning to the 17 peripheral hospitals, and marked these patients as either "discharged alive", "transferred", or "died". This list was then compared with a list of patients admitted to Anuradhapura hospital during the same period to find the ultimate outcome of transferred patients.

We used logistic regression models to investigate the effects of age, gender, poison type, and hospital characteristics on patient transfer, calculated with Stata software (release 8.0; Stata Corporation, College Station, TX, USA). We took account of possible clustering effect of the 17 hospitals by using the "cluster" option of Stata. The hospitals were grouped according to size (based on bed number: small <40 beds; medium 40–100 beds, large >100 beds) and case load (based on the number of patients admitted with self-poisoning: low <20 patients; medium 20–40 patients; high >40 patients).

We used the data to estimate the annual incidence of self-poisoning. Since the data were collected over the last 6 months of 2002, we used prospectively collected data from Anuradhapura between March 2002 and April 2005 to study the effects of season on admissions rates.

Ethics approval was received from the Colombo Faculty of Medicine and Oxfordshire clinical research ethics committees. The cohort study was linked with an audit of patient admissions to peripheral hospitals that was carried out under the auspices of the Provincial Director of Health Services and included a continuing education component for health-care workers in the peripheral hospitals.

Results

Ministry of Health records showed that between 1 July and 31 December 2002, 1763 patients were admitted to hospitals in Anuradhapura District with a diagnosis of poisoning and that 39 died (CFR 2.2%, 95% confidence interval (CI) = 1.6–3.0).

Admissions and outcome in the secondary hospital

Between July and December 2002, 742 self-poisoned patients were admitted to Anuradhapura hospital. Forty-one oleander-poisoned patients were transferred out of the district to tertiary hospitals for temporary cardiac pacing. Overall, 81 of 742 patients admitted to Anuradhapura hospital died (CFR 10.9%, 95% CI = 8.8–13.4). Ten of these patients were dead on admission; 11 died during or after transfer to a tertiary hospital.

Admissions and outcome in peripheral hospitals

Review of patient records in 17 peripheral hospitals (Table 1) showed that 485 patients were admitted with self-poisoning during the 6-month study period. Two of these admissions were of patients who had been transferred back from Anuradhapura hospital after a period of ventilation in the intensive care unit. Both patients had initially been admitted to the primary hospital and then transferred to Anuradhapura; to avoid double counting, we did not include them again in analysis of primary admissions.

Of the 483 primary admissions, 280

Table 1. **Peripheral hospital characteristics and outcome, 1 July–31 December 2002**

Unit	Beds (*n*)	Time to AGH[a] (mins)	Poisoning cases (*n*)	Died in peripheral hospital (*n*)	Discharged alive (*n*)	Transferred from peripheral hospital (*n*)	% transferred (95% CI[b])
1	21–40	45	41	0	20	21	51 (35–67)
2	61–80	45	39	0	17	22	56 (40–72)
3	41–60	60	36	1	22	13	34 (20–51)
4	81–100	45	23	0	11	12	52 (31–73)
5	21–40	120	6	0	2	4	57 (18–90)
6	1–20	75	8	2	3	3	38 (9–76)
7	101–150	45	67	1	50	16	24 (14–36)
8	21–40	60	33	0	17	16	48 (31–66)
9	151–200	120	57	0	32	25	44 (31–58)
10	1–20	60	1	0	1	0	0 (0–98)
11	41–60	45	44	0	30	14	32 (19–48)
12	21–40	45	23	1	9	13	57 (34–77)
13	1–20	20	14	0	9	5	36 (13–65)
14	21–40	60	32	0	9	23	72 (53–86)
15	41–60	120	6	1	5	0	0 (0–46)
16	61–80	20	48	0	7	41	84 (70–93)
17	21–40	30	5	0	5	0	0 (0–52)
All			**483**	**6**	**249**	**228**	

[a] AGH = Anuradhapura General Hospital.
[b] CI = confidence interval.

(58.0%) were male and 203 female. 260 (53.8%) had taken pesticides, around half of which were organophosphorus (OP) pesticides. Oleander seeds and medicines had been ingested by 92 (19.0%) and 58 (12.0%) patients, respectively.

Only six patients (1.2%) died in the peripheral hospitals. Five had ingested pesticides — three taking carbamates and two OPs, representing 100% and 22% of the total number of identified deaths from these two pesticide classes, respectively. The sixth patient took an unknown poison.

249 patients (51.6%) were discharged home from the peripheral hospital while 228 (47.2%) were transferred for specialized care. 226 (99.1%) of the transferred patients could be traced after their arrival in Anuradhapura; 29 of these 226 (12.8%) subsequently died.

Patterns of patient transfer

Similar proportions of male and female patients admitted to a peripheral hospital were transferred to a secondary hospital (men 135/280 (48.2%), women 93/203 (45.8%); odds ratio (OR) 0.91, 95% CI = 0.61–1.34). There was no effect of age on the likelihood of transfer (OR for risk of transfer with each 10 year increase in age: 1.10, 95% CI = 0.89–1.35).

Controlling for age and gender, we used logistic regression to assess whether poison ingested influenced the likelihood of transfer (Table 2). Compared with patients with OP poisoning, patients who had ingested hydrocarbons or medicines were significantly less likely to be transferred, while patients with oleander or paraquat poisoning were more likely to be transferred.

Effect of hospital characteristics on patient transfer

We found marked variability in the proportion of poisoning patients transferred from different hospitals, varying from 0% in three small rural hospitals where 1, 5 and 6 self-poisoned patients, respectively, had been admitted to 90% in a peripheral unit where 49 patients had been seen (see Table 1). Using logistic regression and taking account of clustering, we found in simple models controlling for age and sex that the likelihood of transfer declined with distance from the Anuradhapura hospital (measured in time for transfer; (OR 0.94, 95% CI = 0.81–1.08 for every 10-minute increase in time travelled)).

Increased hospital size was associated with lower levels of transfer — the OR for hospitals with more than 100 beds was 0.46 (95% CI = 0.22–0.95) compared with hospitals with fewer than 40 beds. However, admission of a large number of poisoning patients during the study period was associated with higher transfer rates — hospitals admitting 20–40 patients had OR of 2.66 (95% CI = 1.09–6.55) while those admitting more than 40 patients had an OR of 1.99 (95% CI = 0.63–6.23) compared to those admitting <20 patients. The associations with hospital size and number of poisoning patients were strengthened in a model including all three hospital attributes; however, the association with transfer time was weakened.

Estimated annual incidence of all self-poisoning and of fatal self-poisoning

The 483 patients admitted to the 17 surveyed hospitals represent approximately half of the patients admitted to all 34 peripheral hospitals during 6 months, assuming that admission numbers in the non-sampled hospitals are the same as those in the randomly sampled hospitals. Therefore, we estimate that around 966 patients with self-poisoning were admitted to peripheral hospitals across the Anuradhapura district between July and December 2002.

During the same 6-month period, 742 patients were admitted to Anuradhapura hospital. 226 had been transferred from the 17 audited peripheral hospitals suggesting that approximately 452 (i.e., 2 x 226) of the 742 patients had been transferred and that 290 were admitted directly. The estimated number of primary admissions to all hospitals in the

Table 2. **Outcome of self-poisoned patients admitted to peripheral hospitals according to poison ingested**

Poison	(*n*)	% of all patients	Discharged alive from peripheral hospital	Died in peripheral hospital	Transferred and survived	Transferred and died	Transferred: outcome unknown	Odds ratio (OR) for transfer[a] using OP[b] pesticides as the reference category OR (95% CI[c])
Hydrocarbon	25	5.2	20	0	5	0	0	0.30 (0.11–0.86)
Carbamate	27	5.6	15	3	9	0	0	0.58 (0.24–1.38)
Medicine	58	12.0	39	0	19	0	0	0.58 (0.36–0.94)
Unknown	48	9.9	27	1	19	1	0	0.81 (0.43–1.51)
Other pesticide	74	15.3	44	0	27	3	0	0.83 (0.60–1.14)
OP	135	28.0	70	2	54	7	2	1.00 (reference)
Unknown pesticide	6	1.2	2	0	3	1	0	2.11 (0.39–11.50)
Oleander	92	19.1	27	0	58	7	0	2.95 (1.71–5.12)
Paraquat	18	3.7	5	0	3	10	0	3.12 (0.88–11.03)
Overall	**483**	**100**	**249**	**6**	**197**	**29**	**2**	

[a] OP pesticides used as reference category.
[b] OP = organophosphorus pesticides.
[c] CI = confidence interval.

district during the 6-month study period was, therefore, 1256 (966 + 290).

To estimate an annual incidence from this data, we first determined whether there were seasonal differences in patient admissions to Anuradhapura during the two halves of the year. From 31 March 2002 to 23 April 2005, we had admission data for 424 days from the first half of the calendar year (January to June) and 514 days from the second half (July to December). Admissions were 16% more common in the first half of the year: 4.79 vs 4.12 patients per day. The proportion of patients admitted with oleander or OP poisoning did not differ greatly between the first and second half of the year (25.9% vs 27.9%, and 25.0 vs 22.6%, respectively). Thus, the estimated total number of self-poisoning episodes within the district for the 12-month period was 2713 (i.e. 1256 x 2 (x 1.08) to take into account the seasonal difference).

Eighty-one patients died in Anuradhapura hospital as a result of self-poisoning during the July–December study period in 2002. Six additional deaths were recorded in the 17 peripheral hospitals studied, suggesting that a total of 93 (81 + (2 x 6)) patients died after first presentation to health-care facilities in the whole district during these 6 months. Using adjustments for seasonal differences in rates of self-poisoning episodes, we calculated that 201 patients died during the whole year.

The population of Anuradhapura district in 2001 was 746 466. Thus, crude estimated annual incidences are 363 cases of self-poisoning and 27 fatal cases of self-poisoning per 100 000 population. We estimated that the overall CFR for the district was 7.4% (95% CI = 6.0–9.0).

Discussion

The results of our study show that about 50% of self-poisoning patients admitted to small rural hospitals in Sri Lanka are managed in these hospitals and discharged home without being referred for secondary care. CFRs reported from secondary hospitals in Sri Lanka are artificially high.

By reviewing hospital records for a 6-month period in half the hospitals referring to one district secondary hospital, we have been able to estimate the number of cases and deaths from self-poisoning in the district. From these data, we calculated a CFR of 7.4% for the district, compared with 10.9% in the secondary hospital. Although lower than most estimates from hospital-based studies, this CFR is still 10- to 20-fold higher than CFRs reported in industrialized countries.

Our estimates of cases, deaths, and CFR for the Anuradhapura district from July to December 2002 were quite different to those reported in the government statistics. The official number of cases (1763) was 507 higher than our estimate of 1256. This discrepancy is likely to be due, in part, to the double counting of patients admitted to both primary and secondary hospitals (452 in our calculations). The official figure would also include non-intentional poisoning. The proportion of patients admitted to Anuradhapura hospital for such poisoning is low (3% of poisoning cases[20]) but might account for some of the remaining difference.

The official number of deaths reported for the 6-month study period (39) was much lower than our estimate of 93 (which includes 81 prospectively recorded by us in Anuradhapura). This difference could be the result of patients dying after transfer to tertiary hospitals from district hospitals, and by the secondary hospitals not registering patients who died during transfer. However, the difference also suggests significant underreporting by hospitals. As a result of the larger number of official cases, and fewer deaths, the official district CFR was only 30% of our calculations (2.2% vs 7.4%).

These findings indicate that estimates of the number of fatal cases and the CFR for self-poisoning from either official accounts or secondary hospitals must be viewed with caution. It seems probable that such caution will apply to data from other Asian countries with a significant self-poisoning problem. Our findings also suggest that official suicide statistics may be substantial underestimates.

Our estimate is also likely to be an underestimate because we did not include patients who died before reaching hospital. However, a study currently in progress in the province suggests that relatively few self-poisoned people die before first contact with health-care providers (Eddleston M, unpublished data). This finding contrasts with data from Sri Lanka in the mid-1990s[21] and China from 1998–2000[22] that showed that about 35% of deaths from ingestion of pesticide occurred before admission, markedly lowering the in-hospital CFR. The change in Sri Lanka is probably because of the banning of highly toxic pesticides, such as parathion, endosulfan and monocrotophos,[19,23] which kill quickly and have caused many deaths in India and China.[23,24]

Few deaths (an estimated 12 of 93 (12.9%)) occurred in peripheral hospitals. Ten other patients died during transfer to Anuradhapura hospital, indicating that most self-poisoning deaths (71 of 93 (76%)) occurred after admission to the medical wards of the district hospital. This finding suggests that the transfer triage system is largely successful at identifying patients with life-threatening poisoning (irrespective of whether they can be saved or not).

Three of the six deaths at the peripheral hospitals were due to carbamate poisoning, representing all deaths from carbamates in this study. By contrast, only two of the deaths were associated with OP pesticides and none was due to paraquat. This pattern may be because of a slower onset of action of OP pesticides and paraquat. The OPs now available in Sri Lanka have a slow action compared with the carbamates, which do not need activation and may be rapidly lethal.[25] Alternatively, carbamate poisoning may be perceived as less dangerous than other forms of poison so that carbamate poisoned patients may not be transferred until too late.

We did not find any effect of either age or gender on rates of transfer by peripheral hospitals. However, referral was more likely for oleander or paraquat poisoning compared with other forms of pesticide poisoning. This effect is probably because oleander patients need cardiac pacing and because of the very poor prognosis for paraquat poisoning.

Patients admitted to larger hospitals with more facilities and doctors were less likely to be transferred. However, hospitals with larger numbers of self-poisoning patients transferred more patients, possibly because they used up resources. A qualitative study of patient management in different hospitals may shed more light on this issue.

This study has allowed us to estimate an incidence of around 363 cases of intentional self-poisoning per 100 000 people per year in a rural Sri Lankan district. The figure is likely to be an underestimate since some patients will have died before reaching medical care and some may have taken a small overdose but not presented to hospital. However, we think that our estimates are reasonably accurate since community studies show that almost all poisoned patients are brought to hospital by relatives and all patients presenting to hospital in Sri Lanka are admitted[26] (Maracek, unpublished observations).

Our estimate is similar to that reported from a division of Anuradhapura district in 1991–94 (260–290 cases per 100 000 people per year)[27] but double the 163 cases per 100 000 people per year estimated from a study of patients admitted to two government hospitals in Embilipitiya district in 1998–99.[26] Whether the difference between our data and that from the study in Embilipitiya is due to patients admitted to peripheral hospitals being missed or a reduced incidence of self-harm in Embilipitiya is unclear. There have been no campaigns in this southern district to lower self-harm rates during this period.

The incidence of admission for self-poisoning in England is around 140 per 100 000.[28] Since only approximately half of patients presenting to hospital in England are admitted,[29] this suggests that the incidence of hospital presentations for self-poisoning is near 300 per 100 000. The proportion of all acts of self-poisoning that present to hospital in England is not known; however, a study by Hawton et al.[30] suggests that as many as 75% of overdoses in adolescents might not present to hospital, raising the estimated incidence of self-poisoning in England even further.

The incidence of fatal self-poisoning in this rural district (27 per 100 000) was around three times the fatal self-harm incidence for all methods in England (8.6 per 100 000[31]). However, it is approximately half that recently reported from southern India[32] where highly toxic pesticides are still widely available.[23]

Conclusion

Our results suggest that the incidence of self-poisoning in this rural developing-world district is similar to, or lower than, that of England, but that the CFR for self-poisoning is at least ten-fold higher and the incidence of fatal self-poisoning three-fold higher than that of all fatal self-harm in England. Knowledge about patterns of patient management and transfer within districts is important to allow international comparisons of case fatality and incidence, for interpreting time trends, and for assessing the impact of public health interventions. ■

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Résumé

Modalités d'hospitalisation des cas d'autoempoisonnement délibéré en milieu rural au Sri Lanka : ce qu'elles impliquent pour l'estimation de l'incidence des autoempoisonnements dans le monde en développement

Objectifs La plupart des données relatives à l'autoempoisonnement délibéré dans les zones rurales d'Asie proviennent des hôpitaux de deuxième niveau. Nous nous sommes proposé : de déterminer quelle incidence le transfert d'un hôpital de premier niveau à un hôpital de deuxième niveau peut avoir sur le taux de létalité ; de voir si le sexe du patient ou la nature du poison influent sur le transfert ; enfin, d'estimer l'incidence annuelle des autoempoisonnements délibérés - notamment ceux qui ont une issue fatale - dans les zones rurales du monde en développement.

Méthodes Entre le 1er juillet et le 31 décembre 2002, nous avons vu les patients transférés à l'hôpital général d'Anuradhapura (Sri Lanka) lors de leur hospitalisation pour autoempoisonnement délibéré. Nous avons examiné les dossiers médicaux de cas semblables admis au cours de la même période dans 17 des 34 hôpitaux périphériques environnants.

Résultats 742 patients ont été admis à l'hôpital de deuxième niveau à la suite d'un autoempoisonnement délibéré; 81 d'entre eux sont décédés (taux de létalité 10,9 %). 483 ont été admis pour la même raison dans 17 hôpitaux périphériques. Six d'entre eux sont décédés à l'hôpital (1,2 %) , 249 ont regagné leur domicile et 228 ont été dirigés sur l'hôpital de deuxième niveau. Ni le sexe ni l'âge du patient n'ont eu d'effet sur la probabilité de transfert; en revanche, les patients qui avaient ingéré du laurier-rose ou du paraquat avaient plus de chances d'être conduits à l'hôpital que ceux qui s'étaient empoisonnés avec un pesticide organophosphoré ou d'autres produits toxiques. On a estimé l'incidence annuelle des tentatives d'autoempoisonnement et des autoempoisonnements avec issue fatale respectivement à 323 et 27 pour 100 000 habitants, le taux de létalité global étant égal à 7,4 % (intervalle de confiance à 95 % : 6,0 - 9,0).

Conclusion 50 % des patients admis dans les hôpitaux périphériques ont pu rentrer chez eux, ce qui montre que l'estimation du taux de létalité basée sur les données de l'hôpital de deuxième niveau est exagérée. Cela étant, même si l'incidence des autoempoisonnements est similaire à celle qui est observée en Angleterre, on constate qu'au Sri Lanka, ceux qui ont une issue fatale sont trois fois plus fréquents que tous les autres types de suicide observés en Angleterre. Pour pouvoir comparer les valeurs de l'incidence et du taux de létalité au niveau international et évaluer les interventio ns de santé publique, il est essentiel de disposer de données obtenues en population.

Resumen

Perfil de traslados interhospitalarios de pacientes autointoxicados en una zona rural de Sri Lanka: implicaciones para la estimación de la incidencia de autointoxicaciones en el mundo en desarrollo

Objetivos La mayoría de los datos sobre autointoxicaciones en las zonas rurales de Asia proceden de hospitales secundarios. Nuestros objetivos fueron los siguientes: evaluar cómo influyen los traslados de hospitales primarios a hospitales secundarios en las estimaciones de la tasa de letalidad; determinar si había algún sesgo de derivación según el sexo o el tipo de intoxicación; y estimar la incidencia anual de todos los tipos de autointoxicación, así como de las autointoxicaciones mortales, en un entorno rural del mundo en desarrollo.

Métodos Entre el 1 de julio y el 31 de diciembre de 2002 se examinó en el momento del ingreso a los autointoxicados llegados al Hospital General de Anuradhapura, Sri Lanka. Revisamos además las notas médicas correspondientes a los pacientes autointoxicados ingresados en 17 de los 34 hospitales periféricos de los alrededores durante el mismo periodo.

Resultados En total fueron ingresadas en el hospital secundario 742 víctimas de autointoxicaciones, de las cuales fallecieron 81 (tasa de letalidad: 10,9%). Un total de 483 pacientes fueron ingresados en 17 hospitales periféricos de los alrededores. Seis pacientes (1,2%) murieron en esos hospitales, 249 fueron dados de alta, y 228 fueron trasladados al hospital secundario. No se observó ningún efecto del sexo o la edad sobre la probabilidad de traslado; sin embargo, los pacientes que habían ingerido adelfa o paraquat tenían más probabilidades de ser trasladados que los que habían tomado plaguicidas organofosforados u otros productos tóxicos. La incidencia anual estimada de autointoxicaciones y de autointoxicaciones mortales fue de 363 y 27 por 100 000 habitantes, respectivamente, con una tasa de letalidad global del 7,4% (intervalo de confianza del 95%: 6,0–9,0).

Conclusión Un 50% de los pacientes ingresados en hospitales periféricos fueron dados de alta, lo que demuestra que las tasas de letalidad basadas en los datos de hospitales secundarios están infladas. No obstante, si bien la incidencia de autointoxicaciones es semejante a la de Inglaterra, en Sri Lanka las autointoxicaciones mortales son tres veces más frecuentes que las autolesiones mortales por cualquier método registradas en Inglaterra. Los datos basados en la población son esenciales para realizar comparaciones internacionales de la letalidad y la incidencia y para evaluar las intervenciones de salud pública.

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