

without fever after day 3. All others were regarded as adequate clinical and parasitological response (ACPR). Those with treatment failure were given quinine 10 mg/kg for 7 days. Data was entered into the microcomputer using statistical package for social sciences / personal computer batching for data analysis. Simple frequency, percentage, means and standard deviation were calculated. The data of the 2 groups of patients were compared with students' t-test, χ^2 and Fisher's exact test when applicable; $p < 0.05$ was regarded significant. Eighty out (forty in each group) of ninety-eight patients completed the follow up. The rest were excluded since they changed their addresses (12 patients), developed concomitant infections (4 patients) or they withdrew their consent (2 patients). The baseline demographic, clinical and laboratory data were compared for the 2 treatment regimens (Table 1). There were no significant differences between SP alone and SP plus chloroquine with respect to the distribution of baseline attributes. There were no deaths and none of the patients developed manifestations of severe falciparum malaria. On day 3, although not statistically significant, more patients were febrile (temperature $> 37.5^\circ\text{C}$) in SP alone than in SP plus chloroquine; 19/40, 47.5% (95% CI, 0.71-1.71) vs. 17/40, 42.5% (95% CI, 0.57-1.4), $p=0.6$. There were 6/40, 15.0% (95% CI, 0.36-0.80) patients in SP group who showed treatment failures all were LTF seen on days 7, 14 (2 patients), 21 and 28 vs. 1/40, 2.5% (95% CI, 0.60-23.2) patient in the SP plus chloroquine who developed LTF on day 14. The difference was statistically significant, $p=0.04$.

Combination of chloroquine with SP resulted in adequate synergistic action and antipyretic effect; such regimen can be adopted at the national level in the light of high resistance to monotherapy in Sudan, especially to chloroquine.

Acknowledgment. We wish to thank all the patients for their excellent cooperation and we are very grateful to the local health authority in Kassala State and to the Malaria Administration at the Ministry of Health. Thanks are also extended to Mr. Abdalla Ahmed Hufazalla for his excellent technical assistance.

Received 19th May 2004. Accepted for publication in final form 10th July 2004.

From the Department Pediatrics (Salah), Department of Microbiology (Mohammed), Department Entomology (Himeidan), University of Kassala, Kassala, National Malaria Administration (Malik), Department of Biochemistry (Elbashir), University of Khartoum, Khartoum, Department of Obstetrics and Gynecology (Adam), New Halfa Teaching Hospital, New Halfa, Sudan. Address correspondence and reprint requests to Dr. Ishag Adam, Head, Department of Obstetrics and Gynecology, New Halfa Teaching Hospital, PO Box 61, New Halfa, Sudan. Tel. +249 (421) 822101. Fax. +249 (421) 822070. E-mail: ishagadam@hotmail.com

References

1. World Health Organization. A global strategy for malaria control. WHO, Geneva, 1993.
2. Trape JF, Pison G, Preziosi MP, Enel C, Desgrées du Loû A, Delaunay V, et al. Impact of chloroquine resistance on malaria mortality. *C R Acad Sci Paris* 1998; 321: 689-697.
3. Adam I, Elhadi M, Ahmed GI, Elbashir MI. In the Sudan: Quinine resistance is emerging and chloroquine resistance is worsening. *Sudan Med J* 2001; 39: 5-11.
4. Adam I, Ibrahim MH, A/Elbasit I, Elbashir MI. Efficacy of sulphadoxine-pyrimethamine in the treatment of uncomplicated Plasmodium falciparum malaria in a small sample of Sudanese children. *Eastern Mediterr Health J*. In press 2003.
5. Tarimo DS, Minias JN, Bygbjerg IC. Sulphadoxine-pyrimethamine monotherapy in Tanzanian children gives rapid parasite clearance but slow fever clearance that is improved by chloroquine in combination therapy. *Trop Med Int Health* 2002; 7: 592-599.

Analysis of documents used in referral system in Wad Medani, Sudan

Saad E. Dafallah, MBBS, MGOK,

Eisa M. Yousif, MBBS, MSC,

Ali A. Idris, MBBS, MSC

Referral system has many benefits, however, in Sudan and in many parts of the world, this system is of poor quality. The referral system is a means of communication between physicians at all levels in the health system and it is one of the indicators for health care services.

This analytical, explanatory and exploratory study was carried out in Wad Medani Teaching Hospital in Sudan during the period January 2003 to June 2003. In the study, randomly selected referral documents for 206 patients were collected in 7 hospitals in Wad Medani city. These hospitals were: Wad Medani Teaching Hospital, Wad Medani Pediatric Hospital, Wad Medani Dermatology Hospital, Wad Medani Ophthalmology Hospital, Wad Medani Obstetric and Gynecology Teaching hospital, Wad Medani Dentistry Hospital and Wad Medani Oncology Hospital. The documents were compared with a list, which included the components that should be integrated in the ideal referral document. This includes 10 items. The quality of referral documents was estimated by granting one score to the presence of each item with a total range of 0-10. For more accuracy and preciseness, each item was subdivided into its integral components and each component was

granted equal scores with either 0.2 or 0.5 accordingly. This was carried out as all components were considered equally important. The components on the 10 items were cards, papers, slips and discard paper. If these were well filled, the general condition of the referral form used will be granted with 0.1 for cards, 0.2 for papers, 0.3 for slips and 0.4 for discard papers. The results were obtained manually. Statistical package for social sciences was used for the analysis and interpretation of the results.

A total of 206 referral letters were collected, completed and interpreted as shown in **Table 1**. The results reflected clearly the permissiveness and negative attitude of the senders towards writing a good referral document and figures, as well as, their poor perception on the importance of including all data pertaining to the patients management. Although relatively better recording rates 135/206 (65.5%) have appeared on the component of "provisional diagnosis", the situation with all other components was different, such as 197/206 (95.6%) absent recording on the part of the central nervous system functions test. Thirty-eight (83%) of the letters were illegible (scoring less than 5) while 12.1% (scoring 5–7) were fair and the remaining 4.9% were good (scoring more than 7).

Referral documents to dermatology, ophthalmology, obstetrics and gynecology and dentistry hospitals were all poor and illegible. In fact, these departments shared in common, dealings with specific organ disease and are highly specialized. It seems that health care providers were less concerned with these highly specified disciplines. This explains, but does not justify, the high rates of poorly written referral documents.

The documents coming from private clinics were the most deficient having 85.2% illegibility. This could be due to the fact that doctors were targeting to train housemen on their clinical skills so that others will not justify sending deficient referral documents. The oncology hospital had the largest proportion of the sample size, their statistical department has a unique record keeping system, color code system and their hospital receives referrals from different country locations. The largest was 99 (48%) cases that were referred for treatment while the least proportion was 26 (13%) were referred for surgical intervention. Most of the referral documents 101/206 (49%) were written on pages, 69/206 (33.5%) were on slips and 8 (3.9%) were written on discard paper whose other side had writing on it and cards were used only for 28 (13.6%) of cases.

Referral letters are not accepted worldwide for different reasons. It has improved but in many, there is still room for further improvement. In Britain, Westerman¹ found that the majority of referral

Table 1 - Absence of components of ideal referral documents

Components	n	%
Name	11	(5.3)
Age	79	(38.3)
Sex	199	(96.6)
Tribe	199	(96.6)
Job	164	(79.6)
Residence	137	(66.5)
Complaint	84	(40.8)
Duration	108	(52.4)
Family history	182	(88.3)
Personal history	194	(94.2)
Past medical history	161	(78.2)
History of present illness (pregnancy)	149	(72.3)
Obstetrical history	184	(89.3)
Vital signs	190	(92.2)
Inspection	118	(57.3)
Palpation	116	(56.3)
Percussion	181	(87.9)
Auscultation	194	(94.2)
Central nervous system functions	197	(95.6)
Provisional diagnosis	71	(34.5)
Treatment prescribed	162	(78.6)
Urine in general	144	(69.9)
Stools general	174	(84)
Hemoglobin (Hb)	151	(73.3)
BF	168	(81.6)
Others	123	(59.7)
BF - blood film for malaria.		

letters (60.5%) were of poor quality. While Jaralla² found that 26% of the referral reports were poor, consistent to our current study, with 71% of the letters were also poor.

Our study showed that 83% of the referral letters were illegible. The main reasons for the referral was: 1. for treatment (48%), 2. for diagnosis (22%), and 3. for investigation (17%). Treatment and diagnosis as the main reasons was similar to the results found by Grace and Armstrong³ with 46%

for treatment and 23% for diagnosis. Although the reason for referral were written in 56.3% of the cases, it was inappropriate in 27.2% of the documents. Those were comparable with the results of Jarallah² who found that 25% of the reasons for referral was inappropriate.

Most referred cases needs to be checked at the center before referral. This emphasizes the fact that missing components are important since most of the cases referred to the medical pediatrics, and other department could have been managed at the public health care units. The vital signs, and basic investigations and the treatment given should be recorded before referring such cases. In our study, the vital signs were not recorded in 92.3%, which was greater than the 81% found by McGlade et al.⁴ The investigations were not recorded in 83% of the cases, although facilities were available in the laboratory of the health institution. An example to these are the general and microscopic examinations, which were available but not recorded in the cases of malaria and the fasting blood sugar level was not recorded for diabetic patients. Kieran et al⁴ found that 82% of the investigation were not recorded. There are some cases of trachoma referred to the ophthalmology clinic. Although trachoma diagnosis does not need sophisticated facilities but only skill. The health professionals who did not diagnose trachoma therefore, did not offer treatment available in the public health care units. Both oral sulphonamide and tetracycline eye ointment are always available in all unit pharmacies.

The outcome of poor quality referral letters will lead to the overload of cases that could have been managed at the centers. The health professionals will gradually lose their medical knowledge and skills, while patients might lose confidence in their health care providers. Poor referral letters will lose their value as an important means of communication between physicians at the centers and other units in the hospitals. This will end in the direct and indirect financial outlay by the referred patient. Therefore, health professionals need encouragement to improve the quality of their referral letters. It is also essential to train health professionals to write ideal referral letters and similarly train health care providers to improve their skills in managing the cases at their centers. Health professional should be advised to use properly their units laboratory and pharmacy facilities before referral. They have to design and distribute a standardized "fill-in-space" card and provide facilities for typing referral letters. This recommendations can be carried out by the ministry of health.

Received 31st May 2004. Accepted for publication in final form 26th July 2004.

From the Department of Obstetrics and Gynecology (Dafallah), Department of Public Health (Yousif), Department of Community Health and Health Education (Idris), Faculty of Medicine, University of Gezira, Wad Medani, Sudan. Address correspondence and reprint requests to Dr. Saad E. Dafallah, Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, University of Gezira, PO Box 20, Wad Medani, Sudan. Tel. +249 (511) 43415.

References

1. Westerman RF. A study of communication between general practitioners and specialist. *Br J Gen Pract* 1990; 40: 445-449.
2. Jarallah J. The quality of referral letters in two health centers in Riyadh. *Ann Saudi Med* 1991; 11: 658-662.
3. Grace JF, Armstrong D. Reasons for referral to hospital, extent of agreement between the perception of patients, general practitioner and consultant. *Fam Med* 1986; 653: 143-147.
4. McGlade KJ, Bradley T, Murphy GJ, Lundy GJ. Referral to hospital by general practitioners: a study of compliance and communication. *Br Med J* 1988; 297: 1246-1248.

Uterine prolapse immediately after labor

Mesut A. Unsal, MD, Ulku Zengin, MD,
Mehmet Ozeren, MD, Hasan Bozkaya, MD.

Uterine prolapse during pregnancy is a relatively rare complication. Furthermore, its occurrence during labor or early postpartum period is exceedingly rare.¹ While uterine prolapse during pregnancy is a well known entity, there is no information regarding uterine prolapse at labor so far. Although occurring during labor and having similar appearance to uterine inversion, the clinical prognosis is not as serious as uterine inversion.

A 30-year-old Caucasian woman, gravida 2 para 2, was presented to our emergency clinic with soft tissue prolapse at the vaginal introitus immediately after labor. There was no preceding history of uterine prolapse in her pregnancy. She uneventfully delivered a 3200 g male infant in the car on a countryside road to a local hospital. Four years ago, she had an uncomplicated delivery of a full term 3300 g infant. Her general condition was good. On physical examination, there was no palpable mass in the abdomen. Initially, the mass was thought to be an inverted uterus, but pelvic examination revealed a complete uterine prolapse with the cervix outside the introitus according to the grading scheme of Baden et al.² The uterus and cervix were edematous, desiccated, dark blue-red and covered with bloody secretions (Figure 1). Her vital signs and complete blood count evaluation were normal. Prophylactic antibiotics were started with