A randomized comparison of sulphadoxine-pyrimethamine and combination of sulphadoxine pyrimethamine with chloroquine in the treatment of uncomplicated falciparum malaria in Eastern Sudan

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Early diagnosis and effective treatment with appropriate drug is the main component of the World Health Organization (WHO) strategy to reduce malaria-related mortality.[1] For many years the treatment of malaria in Africa has relied on chloroquine, sulphadoxine-pyrimethamine (SP), and quinine, with the latter being used mainly to treat severe cases. Chloroquine and SP are failing and leading to an increase in mortality from malaria especially in East Africa.[2]

The increasing resistance of *Plasmodium falciparum (P. falciparum)* in Sudan to chloroquine created urgent needs for evaluation of alternative antimalarial drugs.[3] These should be effective, safe, readily available and affordable. Several African countries have adopted SP as the first line treatment for malaria after chloroquine failure. Sudanese health authority has now adopted SP as the first line treatment for uncomplicated falciparum malaria. High level of resistance to SP across Eastern and Southern parts of Africa has been reported and Eastern Sudan is not an exception.[4] Combination of SP with chloroquine could slow down the development of resistance to these drugs. Chloroquine is safe, cheap and has antipyretic effect and it was recently reported to be synergistic to SP in other African countries.[5] No data exist in Sudan about combination of SP with chloroquine, hence, this has been the objective of this work. The study was conducted in Elsawagi Alganoubi, Kassala, Eastern Sudan during the period September - November 2003. Patients with documented axillary temperature ≥37.5^{o}C and with confirmed uncomplicated *P. falciparum* infection were included in the study after obtaining informed consent. Patients were excluded if they have concurrent infection, allergy to sulfonamide, or treatment within the last 2 weeks with sulfonamide, quinine, mefloquine or chloroquine. All enrolled patients underwent a thorough history and physical examination by the medical officer and received either SP alone (sulphadoxine 25 mg/kg, Amipharma laboratory, Sudan), or SP as per mentioned dose plus chloroquine (Amipharma laboratory, Sudan) 25 mg/kg, 10 mg at day 0, 10 mg at day1 and 5 mg at day 2. The patients were given the medication orally under supervision and monitored for 30 minutes. A second full dose was administered if the patient vomited within 30 minutes. Patients who vomited the drug for the second time were excluded from the study and were given parenteral quinine. Thick and thin blood films were prepared from capillary blood, stained with Giemsa (pH 7, diluted in phosphate buffered saline) and 100 oil immersion fields were examined. The parasite density was examined by counting the parasites and leucocytes, assuming 6000 leucocytes per µl. All the slides were double-checked blindly. The blood films were repeated on days 1, 2, 3, 7, 14, 21 and 28 or at any time if symptoms reoccur. Patients were asked to attend for follow up on days 1, 2, 3, 7, 14, 21 and 28 or if they developed febrile symptoms or if they feel unwell. Patients were asked about the presence of fever, vomiting and diarrhea. At each visit, brief physical examination, including axillary temperature was performed and the blood was taken for thick films. The efficacy of the 2 regimens SP and SP plus chloroquine was assessed by (28 days) a modified WHO protocol for uncomplicated falciparum malaria for areas of moderate or low malaria transmission. Patients were classified as early treatment failure, if they developed dangerous signs of severe malaria on day 3, the parasite density on day 2 exceeded that on day 0 or the parasite density on day 3 ≥ 25% of that on day 0. Late treatment failure (LTF) means development of symptoms or signs of severe malaria, or development of any parasitemia with or

Table 1 - Different admission variables of patients treated with sulphadoxine pyrimethamine alone or sulphadoxine pyrimethamine plus chloroquine.*

Variable	Sulphadoxine pyrimethamine (N = 40) mean ± SD	Sulphadoxine pyrimethamine plus chloroquine (N = 40) mean ± SD
Age, years	15.5 ± 15.2	17.8 ± 12.1
Weight, kg	37.04 ± 23.1	38.5 ± 17.6
Temperature, ^{O}C	38.06 ± 0.96	38.2 ± 0.66
Parasite count, rings/µ	17450.8 ± 20601.2	15097.92 ± 14896.406

* There were no significant differences between the 2 groups.

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, X^2 and Fisher's exact test when applicable; $p \leq 0.05$ 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 > 37.5ºC) 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.

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

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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, Westerman[1] found that the majority of referral letters (60.5%) were of poor quality. While Jaralla[2] 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 Armstrong[3] with 46%

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.

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 Jaralla[2] 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 al[4] 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.

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Uterine prolapse immediately after labor

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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

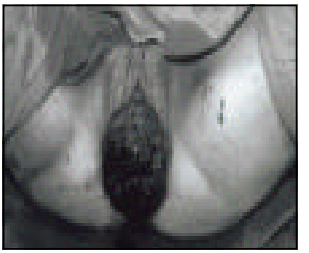

Figure 1 - The uterus and cervix that is edematous, desiccated, dark blue-red and covered with bloody secretions.

clindamycin 600 mg intravenously 4 times daily and gentamycin 80 mg intravenously 3 times daily. Tetanus vaccine and immunoglobulin were also administered. Her prolapsed uterus was manually reduced to its normal position and then 1% oxytocin solution infusion was started to promote uterine contractility. She was placed at Trendelenburg position with strict bed rest. On the second day, oxytocin was stopped and methylergobasine 0.125 mg 3 times daily was started and continued for 3 days, per orally. She was discharged on the 8th postpartum day and no prolapse of the uterus was noted during the follow up period of 6 months.

The cause of uterine prolapse is unclear, but in several predisposing factors (such as, childbirth trauma, congenital and developmental weakness, and the influence of menopause), failure of the supportive ligaments leading to prolapse of the uterus and vaginal vault is thought to be the most important factor. Although the diagnosis of uterine prolapse is usually based on clinical signs and symptoms, it is clinically important to differentiate it from acute uterine inversion. The classical signs of acute total uterine inversion are: shock incompatible with the quantity of blood loss, absence of uterine fundus on abdominal examination and no visualization of the cervix.[3] Our case was hemodynamically stable and the cervix was visible, which confirmed uterine prolapse. Delayed treatment leads to impaired lymphatic and venous drainage, resulting in acute edema of the protruding uterus and cervix, thus, its reduction is difficult without general anesthesia. Delayed treatment also result in mechanical trauma that causes ulceration and infection of the edematous cervix and even severe urinary tract infection due to acute urinary retention.[4] Considering that the woman had delivered the baby under non-sterile condition, prophylactic antibiotics and tetanus immunization were used, without delay in diagnosis.

Differently from acute uterine inversion, manual manipulation without general anesthesia before the development of excessive edema, slight Trendelenburg position with bed rest is the treatment modality in successful reduction of prolapse, and this will protect the patient from above discussed complications. Agents such as oxytocin or methylergobasine are then given to produce uterine contraction to prevent a second prolapse. Since perineal descent on straining is almost always evident immediately after vaginal delivery and returns to normal position during the subsequent 2 months,[5] a control examination 2 months after vaginal delivery was recommended, reminding that on this case, there is a possibility of recurrence on the next pregnancies.

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Spontaneous bacterial peritonitis due to *Hafnia alvei* in a patient with peritoneal mesothelioma

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Spontaneous bacterial peritonitis (SBP) is a frequent and severe complication of cirrhotic patients with ascites. It has also been reported in patients with chronic active hepatitis, acute viral hepatitis, congestive heart failure, metastatic malignant disease, systemic lupus erythematosus, lymphedema, and rarely without any underlying disease.[1] Most patients with SBP have symptoms

and signs clearly suggestive of peritoneal infection, especially abdominal pain, fever and alterations in gastrointestinal motility. However, SBP may be asymptomatic or there may be only minor symptoms in some patients.[2] Peritoneal mesothelioma is a rare neoplasia usually associated with exposure to asbestos. The incidence in the population not in contact with asbestos is of one per million per year. The disease is most common in males over the age of 40, with signs and symptoms of neoplasic disease together with abdominal pain and ascites with or without a palpable abdominal mass.[3]

A 60-year-old man was admitted to a hospital for abdominal distention, indigestion and dry mouth. The laboratory findings were not suggestive of a liver disorder. He was hospitalized for etiological investigation. Although, no abdominal mass was palpated ascites was found on physical examination. Paracenthesis fluid was cloudy and chemically exudative but not hemorrhagic. White blood cell was 4600/mm^3 with 86% neutrophils and no organism was isolated in the material. Ceftriaxone (2x1 gram intravenously) treatment was initiated empirically. Since hyperplasic mesothelial cells were detected in cytological examination of the ascites material, diagnostic laparoscopy was performed in this afebrile patient with a relatively well general status. During laparoscopy, approximately 4 liters of dark yellow, sticky mucous ascites material was drained. Lipoid, irregular multiple mass lesions were detected on visceral and parietal peritoneum. *Hafnia alvei (H. alvei)* was isolated in biopsy specimens that were obtained from parietal peritoneal lesions. It was susceptible to ciprofloxacin, imipenem, and aminoglycosides such as netilmisin, amikacin. The patient was reported as having malignant mesethelioma after pathological evaluation and then was referred to the oncology department. Microorganisms, presumably of enteric origin, account for up to 75% of the pathogens in SBP. *Escherichia coli* is the most frequently recovered pathogen, followed by *Klebsiella pneumoniae*, *Streptococcus pneumoniae*, and other streptococcal species, including enterococci.[1,4] In literature, we observed some uncommon bacteria as a cause of SBP, such as *Pasturella multocida*, *Listeria monocytogenes* and *Brucella melitensis*. All those patients were cirrhotic due to chronic liver diseases caused by alcohol or hepatitis C virus. *Hafnia alvei* is an extremely uncommon cause of peritonitis since there is only one literature about peritonitis caused by *H. alvei*.[5]

Hafnia alvei, is a Gram-negative aerobic bacillus in the family *Enterobacteriaceae* that may occur as a gastrointestinal commensal. It is not frequently involved with infection. It is found in sewage, soil and the large intestines of humans.[6] Infections due to *H. alvei* are acquired nosocomially or occurs in patients with chronic underlying illnesses, including chronic obstructive pulmonary disease, diabetes, chronic renal failure and malignancy. Many different infections due to *H. alvei* have rarely been described such as lung infections, and diarrheal diseases. Extra intestinal invasive infections caused by the organism usually occur in patient with chronic debilitating disorders and they are frequently isolated after antibiotic treatment. In the patient, there is a history of using third-generation cephalosporin before isolation of *H. alvei.* Despite most isolates of *H. alvei* reported in the literature are susceptible to third-generation cephalosporins, antibiotic susceptibilities that appears to be similar to those of the Enterobacter group.[6] In addition, our patient's isolate was resistant to all penicillins and cephalosporins and their combination with beta-lactamase inhibitors. It was susceptible to ciprofloxacin, imipenem, and aminoglycosides such as netilmisin, amikacin. Even though most patients with SBP have symptoms and signs suggestive of peritoneal infection, the clinical manifestations may be atypical in some patients. There were no signs and findings of a typical peritonitis in our patient. The diagnosis of peritonitis can usually be established by paracentesis. If Gram-negative organisms, a mixed flora, or no organisms are obtained, full exploratory laparotomy/laparoscopy is indicated to rule out possible intra abdominal sources of continuing peritoneal contamination.[1]

In conclusion, we believe that if no microbiological evidence is found in peritoneal fluid of patients with unexplained ascites, peritoneal biopsy for cytopathological and microbiological examination should be considered.

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Antibiotic resistance patterns of *Acinetobacter* species isolated in King Hussein Medical Center, Jordan

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Acinetobacter species is aerobic, Gram-negative coccobacilli, oxidase-negative, catalase positive, nonfermenting bacteria. Though widely prevalent in nature and generally regarded as commensals of human skin, respiratory and genitourinary tracts colonize the skin up to 25% and up to 7% in the pharynx of healthy adults.[1]

In 1986, taxonomy of the genus *Acinetobacter* was changed extensively by Bouvet and Grimont,[2] who outlined 12 different species by DNA-DNA-hybridization, including the named species *Acinetobacter Baumanii* (*A. Baumanii*), *Acinetobacter Calcoaceticus* (*A. Calcoaceticus*), *Acinetobacter Haemolyticus* (*A. Haemolyticus*), *Acinetobacter Johnsonii* (*A. Johnsonii*), *Acinetobacter Junii* (*A. Junii*) and *Acinetobacter Lwoffii* (*A. Lwoffii*) and 6 unnamed genomic species. Most of *A. Baumannii* and all *Acinetobacter* species strains 3 and 10 represent organisms that were formerly classified as *Acinetobacter Anitratus* (*A. Anitratus),* whereas all *A. Junii, A. Lwoffii* and *Acinetobacter* species strains 11 were formerly classified as *A. Lwoffii*.[3] These species are often multiresistant to antibiotics, meaning that therapy and infection control are complicated.[4] *Acinetobacter* species now known to be responsible for a wide range of nosocomial infections, including bacteremia, secondary meningitis, urinary tract infections, pneumonia, tracheobronchitis, endocarditis, wound infections and surgical site infections. *Acinetobacter* infections are most frequently associated with the use of a ventilator, urinary tract catheter or other invasive device. In the United States of America, among the intensive care unit (ICU) patients, during the period 1987-1996, reported cases of nosocomial *Acinetobacter* infections were 3447, the average rate of infection being significantly higher during summer than in winter.[4]

The aim of this study was to determine antibiotic resistance rates of *Acinetobacter* species strains isolated from patients in order to give information to clinicians when empiric therapy is necessary. A total of 133 consecutive, non duplicate *Acinetobacter* species isolates were studied over a period of 18 months, between July 2000 and December 2001 from various clinical materials at King Hussein Medical Center, Amman, Jordan, which is a 800 bed hospital. Duplicated isolates from the same infective episode in the same patients were excluded. According to the instructions provided by the manufacture, Vitek-1 system (Bio Merieux, France) were used for identification and studying the susceptibility of isolates, using V 1306 vitek GNI (Gram-negative identification) card for identification of the isolates, and V 4313 vitek GNS-528 (Gram-negative susceptibility) cards were used for studying the susceptibility of *Acinetobacter* isolates, and for the susceptibility testing of the isolates from urine using V 4525 Vitek GNS-203. *Echerichia coli* ATTCC 25922, *Staphylococcus aureus* ATTCC 25923 and *Pseudomonas aeruginosa* ATTCC 27853 were used as quality control organisms.

During the period of 18 months, a total of 133 *Acinetobacter* species isolated from clinical specimens were tested for antimicrobial susceptibility, among these isolates were 38 (28.57%) were from urine, 31 (23.31%) from blood, 54 (40.60%) from wounds, 7 (5.26%) from sputum, and 3 (2.55%) from other specimens. *Acinetobacter Calcoaceticus Biotype Anitratus* was the most common *Acinetobacter* species isolated with 130 isolates (97.74%), followed by *A. Lowffii* with 2 isolates (1.50%) and *A. Calcoaceticus-Bumanii* complex with 1 isolate (0.75%). The results of activities of antimicrobial agents against the *Acinetobacter* isolates are shown in **Table 1**. The most active antimicrobials for the isolates from urine was minocycline, while for the isolates from other specimens were the imipenem, ticarcillin/clavulanate, ceftazidime and netilmicin. An important feature of *Acinetobacter* species, is their intrinsic resistance to multiple antibiotics. Recently, reported surveys have demonstrated high rates of resistance to aminoglycosides, cephalosporins, quinolones, penicillins, monobactams, and imipenem, often in excess of 50%, among clinical isolates of *Acinetobacter*. Antimicrobial treatment of the infections due to highly resistant *Acinetobacter* strains can lead to treatment failure, and is associated with an increased risk of death.[5]

Table 1 - Resistance rates to the antimicrobial agents.

Antibiotic	Blood isolates (%)	Wounds and other (%)	All isolates (%)	Antibiotics	Urine isolates (%)
Amikacin	(23.53)	(44.83)	(34.18)	Amoxicillin/CA	(65.1)
Aztreonam	(58.82)	(86.21)	(72.51)	Ampicillin	(88.5)
Cefepime	(41.18)	(79.31)	(60.24)	Carbenicillin	(28.5)
Cefsulodin	-	-	-	Cefazolin	(9.14)
Ceftazidime	(29.41)	(13.79)	(21.60)	Ceftriaxone	(5.14)
Ciprofloxacin	(29.41)	(72.41)	(50.91)	Cefuroxime/sodium	(9.14)
Gentamicin	(58.82)	(82.76)	(70.79)	Cephalothin	(9.14)
Imipenem	(5.88)	(6.90)	(6.39)	Ciprofloxacin	(51.43)
Netilmicin	(41.18)	(20.69)	(30.93)	Gentamicin	(62.86)
Pefloxacin	(41.18)	(72.41)	(56.80)	Minocycline	-
Piperacillin	(64.71)	(79.31)	(72.01)	Nalidixic acid	(51.43)
Piperacillin/tazobactam	(17.65)	(44.83)	(31.24)	Nitrofurantoin	(100)
Ticarcillin	(41.18)	(48.28)	(44.73)	Ofloxacin	(51.43)
Ticarcillin/clavulanate	(23.53)	(13.79)	(18.66)	Ticaracillin/clavulanate	(1.14)
Tobramycin	(41.18)	(37.93)	(39.55)	Tobramycin	(45.1)
Trimethoprim/sulfamethoxazole	(58.82)	(72.41)	(65.61)	Trimethoprim/sulfamethoxazole	(65.1)

In our study, wounds were the most common site of isolation 40.60%, due to high number of specimens from the burn unit and surgical ICU. The results of antimicrobial susceptibility, for the *Acinetobacter* strains, which were isolated from urine, showed high percentage of susceptibility to minocycline (100%), to ticarcillin/CA (82.86%), to carbenicillin (71.43%), and to tobramycin (54.29%). By contrast, the other 14 antibiotics which tested in this group, showed high percentage of resistance (>50%), for the *Acinetobacter* strains which isolated from clinical specimens other than urine, and among the cephalosporins, which *Acinetobacter* bacteria are naturally resistant due to the production of cephalosporinase,[5] the ceftazidime showed the percentage of resistance of (21.60%) and for cefepime (60.24%). The aminoglycosides in our study was 39.55% of the isolates, and were resistance to tobramycin, 70.79% to gentamicin, 34.18% to amikacin, and 30.93% to netilmicin. Thus, the presence of aminoglycoside-modifying enzymes is responsible for the resistance of *Acinetobacter* strains to a great number of aminoglycosides.[6] Trimethoprim-sulfamethoxazole in our study showed percentage of resistance of 65% for *Acinetobacter* isolates from urine and other specimens. Among quinolones, 50.91% of the isolates were resistance to ciprofloxacin, 56.80% to pefloxacin, and 51.43% of the *Acinetobacter* isolates from urine were resistance to ofloxacin. In β -lactam group of antibiotics, imipenem was the most active antibiotics for all isolates, with 6.39% resistance rate, followed by ticarcillin/clavulanate with 18.66%, ceftazidime 21.60%, and piperacillin /tazobactam 31.24%, while aztreonam 72.51%, piperacillin 72.01% and cefepime 60.24% showed high percentage of resistances, while in European hospitals,[7] imipenem 31%, ceftazidime 35% and piperacillin/tazobactam 34%.

In conclusion, the susceptibility rates of *Acinetobacter* species vary widely, geographically and with time, although comparison between studies is difficult, one explanation for this is the variation in methods of susceptibility testing and in breakpoints to determine sensitivity, and in the present study and other studies, imipenem remained one of the most active antibiotics against *Acinetobacter* bacteria.

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Anti-*Toxoplasma gondii* antibodies in patients infected with hepatitis B virus

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Toxoplasma gondii (*T. gondii*) is closely related to other Coccidia and has certain similarities to malarial parasites. The parasites were first discovered on a North African rodent called the *Ctenodactylus gundii*, hence, the species was named as *gondii*. Although serologic evidence indicates a high rate of human exposure to the organism, the disease itself is relatively rare. *Toxoplasma gondii* can infect many vertebrates as well as humans, but the definitive host is the house cat and other members of the Felidae family. This organism is an obligate intracellular parasite, which are found in humans in 2 forms. The actively proliferating trophozoites or tachyzoites are usually seen in early, more acute phases of infection. The resting forms or tissue cysts are primarily found in muscle and brain, probably as a result of the host immune response.[1] *Toxoplasma* infections can be acquired postnatally and are categorized into 4 groups: (a) lymphadenitis, fever, headache and myalgia, with a possibility of splenomegaly and a brief erythematous rash (b) typhus-like exanthematous form with myocarditis, meningoencephalitis atypical pneumonia and possible death (c) retinochoroiditis, which may be severe, requiring enucleation (d) central nervous system involvement, which is usually fatal.[2] *Toxoplasma gondii* is transmitted parenterally, flourish in states of immunosuppression and most of *Toxoplasma* infections are asymptomatic. The large number of people who are serologically positive for *T. gondii* suggest that the majority of infections are benign, with most people exhibiting few (cold or light case of flu) or no symptoms. In a small percentage of cases, symptoms may range from mild to severe results.[2]

In Turkey, hepatitis B virus (HBV) is still a serious health problem. The prevalence of HBV carriage is 2-10%. Hepatitis B represents syndromes of hepatocellular necrosis, inflammatory and regenerative responses associated with little or no liver disease or with acute hepatitis. Patients with HBV demonstrate various cellular and humoral immunity disorders. Immunosuppression seems to increase HBV replication.[3] It may be thought that toxoplasmosis may lead to more frequent and more severe diseases in patients with HBV and may change the course of the disease. Therefore, we planned this study to determine the seroprevalence of anti-*T. gondii* antibodies in patients infected with HBV.

One hundred patients (57 males and 43 females; mean age: 46.5 ± 10.2) with HBV were selected and followed up by Ege University Medical Faculty, Gastroenterology department. All selected patients had positive hepatitis B surface antigen (HBs Ag) and they have been followed for at least 6 months for HBV. We also selected 50 healthy volunteer blood donors as control group (31 males and 19 females; mean age: 40 ± 6.7). Blood samples were taken from the brachial vein of all patients under sterile conditions. The sera were separated after centrifugation at 1000 x rounds per minute for 10 minutes and stored at –20 ^{o}C until the analysis.

Serologic techniques. Enzyme linked immunosorbent assay (ELISA). The sera were diluted and assessed semi quantitatively. For this, samples were diluted up to 1/64, 1/256, 1/1024 and 1/4096 to determine immunoglobulin M (IgM) antibodies and up to 1/256, 1/1024, 1/4096, 1/8000 and 1/32000 to determine immunoglobulin G (IgG) antibodies. The sera were read at 405 nm wavelength ELISA reader (Titertek II). The mean absorbance values of negative controls were added to the standard deviation of the absorbance values. Those that were obtained above the cut-off were accepted as positive and compared with the values expressed by these control sera to assess the suspected sera. Accepted as significant titers with regard to active disease were 1/1024 for IgG and above and 1/256 and above for IgM.

Immunofluorescent assay (IFA). Particle antigens were prepared and serum samples were diluted and assessed semi quantitatively. The dilution of the sera within the scope of the study was 1/16, 1/64, 1/128, 1/256, 1/512, 1/1024 and 1/4096 for both IgG and IgM. The results obtained were assessed by a fluorescent microscope (Nikon) at 490 nm stimulation, 510 nm barrier filter wavelength and x 200 magnification. Accepted as significant titers with regard to active disease were 1/256 for IgG and above and 1/16 and above for IgM. All samples that were obtained for seropositive of IgM were also determined by micro ELISA IgM immune capture kit purchased from MEDDENS commercial manufacturer for confirmation. This technique was performed following the manufacturer's instructions.

Statistical analyses. Student t-test was used for the statistical analyses and was carried out by the statistical package for social sciences V.10 for Windows.

Seventy-eight (78%) cases in the patients group and 24 (48%) healthy volunteer blood donors (control group) were found to be positive for IgG antibodies (**Table 1**).

The percentage of anti-*T. gondii* IgG positive antibody in patients with HBV (78%) was found to be significantly greater than the healthy volunteers (48%) ($p<0.05$). Three patients were positive for IgM antibodies (3%) in the patient group, although all subjects in the control group were seronegative. The percentage of anti-*T. gondii* IgM positive antibody in HBV patients (3%) was found to be greater than the healthy volunteers (0%) but the differences between the groups were not statistically significant ($p>0.05$).

Toxoplasmosis is a protozoan disease that is widespread all over the world and demonstrates varying clinical manifestations.[1] Determination of its incidence in the society and the establishment of these risk play a significant role in taking the necessary precautions against this disease. Previously, seropositivity rates of specific IgG antibodies for *Toxoplasma* were reported as 23.1% in Izmir Region and 36% in Kayseri Region in Turkey.[4] This present work is the first study with controls that addressed the prevalence of anti-*T. gondii* antibodies among the patients with HBV infection in Turkey. This study is also the first investigation of *Toxoplasma* seroprevalence in patients with HBV.

Table 1 - The percentage of anti-*T. gondii* IgG and IgM antibodies in hepatitis B virus on patients and control group.

	Age Mean ±SD	IgG positive n	(%)	IgM positive n	(%)
Patients	46.5 ± 10.2	78	(78)	3	(3)
Controls	40 ± 6.7	24	(48)	-	-

IgM - immunoglobulin M
IgG - immunoglobulin G

Turkey is in the moderately endemic region (2-10%) for hepatitis B. The proportion of HBV infections attributable to occupational exposures in the cohort, which includes some subjects born in HBV endemic areas and others who may be at risk for non-occupational HBV infection, is an important factor. Liver injury and extra hepatic disorders are caused by cell-mediated and humoral patterns of response to HBV infections. Whereas, both humoral and cellular immune responses are needed for effective viral clearance, the cellular immune response appears to be primarily involved in the pathogenesis of the disease. Therefore, cytokines play a crucial role in the natural clearance of HBV. They have been used as possible therapeutic agents for chronic hepatitis B. Cytokine responses are characterized as T-helper one (TH1), which induce HBV specific cytotoxic T lymphocytes and virucidal cytokines such as tumor necrosis factor alpha and interferon-λ or TH2, which induce antibody responses to viral antigens.[5] The present results revealed higher percentage of positivity for *T. gondii* IgG antibodies in patients with HBV (78%) compared to the controls (48%) with a statistically significant difference. These findings may be due to the fact that patients with HBV are immunocompromised which increase their susceptibility to this infection.

The patients with HBV may well form a risk group for *Toxoplasma*. The reasons as to why both the antibody positivity and titers have been found to be at high rates are still not clear. We know that

toxoplasmosis presents a special problem in immunosuppressed host, wherein reactivation of a latent toxoplasmosis may be developed. Therefore, patients with HBV should be screened for *Toxoplasma* and parasitologic surveys of HBV patients should be periodically performed to prevent the possible dissemination of toxoplasmosis.

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Hypovolemic cardiac arrest after dental extraction. *An unexpected high-flow maxillar arteriovenous malformation*

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Maxillar arteriovenous malformations (AVMs) of the maxillofacial region sometimes give rise to dental emergencies and may cause disfigurement, morbidity and even death. The most common clinical presentation is expansion of the buccal cortex, gingival bleeding from around the necks of mobile teeth or severe hemorrhage after dental extraction, gingival biopsy, or eruption of a tooth.[1,2] The vascular and hemodynamic nature of the lesion is important in determining the treatment and providing a favorable prognosis. Preoperative embolization and intervention by different therapeutic surgical modalities became the treatment of choice in the majority of cases.[3] This report describes a case of life threatening post extraction hemorrhage occurring in hypovolemic shock.

A 6-year-old girl was referred to the emergency department for assessment of post-extraction hemorrhage. On the day of presentation, she underwent extraction of the third molar tooth at a hospitals' dental office under local anesthesia. After the extraction, severe hemorrhage began and the dentist made a digital pressure at the site of the hemorrhage. However, the patient and her parents were agitated as the hemorrhage was constant. Hypotensive shock then occurred. Pulse and blood pressure (BP) was not achieved. A 24 G cannula was placed and entubated with 5 mg midazolam. Hemoglobin (Hb) count was 4 g/dl and so blood transfusion (400 cc) was administered. However, the tamponade was not able to stop the hemorrhage so she was referred to Hacettepe University Hospital emergency department. On examination, vital signs indicated hypotension (BP 60-40 mm Hg) and tachycardia (heart rate 140 beats/min), a mild hypoxia was noted despite the spontaneous breathing (oxygen saturation was 94% on room air). Neurologic examination was not carried out due to midazolam. Laboratory tests revealed a Hb count of 9.2 g dl^{-1} and hematocrit of 26%. Arterial blood analyses: hydrogen ion concentration 7.2, partial pressure of carbon dioxide 43.5, base excess -7.9 and laboratory data analyses were within normal limits. Anesthesia and maxillofacial surgery department examined the patient and decided to make an angiography. A cerebral and facial angiography was carried out under general anesthesia and revealed high flow arteriovenous malformation fed by right maxillary artery. Embolization, which consist in occluding the vessels contributing to the lesion (right maxillary artery) with polyvinyl alcohol particles (1 vial). An embolization of the right maxillary artery and arteriovenous malformation was performed. A complete occlusion of the malformation and cessation of bleeding were achieved after the embolization. On arrival in the anesthesia reanimation unit, blood results revealed a Hb of 11.7 g.dl^{-1} and the trachea was extubated uneventfully on the sixth hour after the embolization. Twelve hours later, surgery was performed by curettage of the collapsed vascular anomaly at the maxillary sinus and maxillary bone. There was no excessive bleeding (60 cc). She was discharged in good condition 3 days later with Hb

level of 12.4 g dl^{-1} on the day of discharge. The pathology report on the specimen showed numerous anomalous vessels with mild inflammatory reaction.

Arteriovenous malformations of the dental arcades represent some of the most challenging lesions in the maxillofacial region. Intraosseous vascular malformations on the other hand, are caused by a disturbance in the late stages of angiogenesis (truncal stage) and result in the persistence of arteriovenous origin that are often referred to as "high-flow vascular malformations" and are often the cause of massive, sometimes fatal hemorrhages.[1] Gingival bleeding seems to be a symptom common to most documented cases. Many instances of massive hemorrhage, even exsanguinations, have been documented following the extraction of teeth associated with these AVMs. Extraorally, the face is often asymmetrical, with an accompanying bluish discoloration. There was none of these symptoms in our patient. Embolization, which consist of occluding vessels contributing to the lesion, has been used for sometime. Several materials, usually inserted by means of femoral catheterization, have been used: polyvinyl alcohol particles, muscle, gel foam, cyanoacrylate, metal coils, and collagen.[2] Some authors present this technique as a preliminary and indispensable adjunct to excision and reconstructive surgery, while others use it as the sole, definitive approach.[3] Embolization, combined with surgical treatment, is still the most conventional modern approach. This procedure controls the acute hemorrhagic phase, but does not eliminate the risk of recurrence, owing to the appearance of a collateral circulation. It does, however, reduce the blood flow, allowing excision surgery to be performed within anywhere from 48 hours to 2 weeks.[4]

Preoperative embolization of our case was successful as no significant blood loss occurred during surgery. Most of the reports deal with mandibular AVMs and it could be suggested from these date that maxillary lesions are more rare.[5]

Hemorrhage is the most devastating complication that can be expected in AVMs and represents even if minor, an indication for treatment in emergency. Even if the patients have never bled up to the time of the diagnosis, they should be treated expeditiously, as hemorrhage can be a potentially fatal complication. In our case, there was no history of bleeding and swelling or pain like the symptoms of AVMs.

Tooth extraction should not be considered at that time, or any other treatment on the gum, as it will just exacerbate the bleeding which may become uncontrollable. If this is the case, the patient should rapidly close his mouth and clench the teeth tightly so that the dental contact can produce homeostasis. He should then be rapidly transferred to a neuroradiology unit where endovascular therapy will be undertaken as an emergency. Surgery seems contraindicated in this disease, at least in the first instance. It used to be performed in hemorrhagic conditions, with great technical difficulties, which most often resulted in extensive or mutilating interventions. It should, for these reasons, not be considered in these acute situations that be managed by embolization. The approach we propose, in our opinion, the best way to treat these lesions in this case as the extraction was carried out and the hemorrhage was life threatening. Hypovolemic shock occurred and her trachea had to be entubated to save the airway.

Dental extraction causes a life-threatening hemorrhage if there is AVMs and emergency management with transfemoral embolization is a simple and safe technique before surgery.

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Health insurance. *A need of time*

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In an ideal world, health care should be provided to all irrespective of their economic status. But in the present era of high-tech management strategies, the cost of health care has gone up and the level of care provided correlates with the social class of the patient. This becomes more valid and true in situations utilizing the intensive care facility of the

hospital.[1,2] Many of the expatriates working in Middle Eastern countries, especially the labor class, do not have access to full medical insurance and health coverage. This situation may lead to acute crisis.

A baby boy of an expatriate family born at a local private maternity center in Muscat, Oman was noted to have severe cyanosis soon after birth. The baby was immediately transported to the tertiary center for further care. On arrival to the accident and emergency, the baby was noted to be in severe distress with oxygen saturations of 40-50%. The baby was immediately intubated and transferred to the neonatal intensive care unit. An urgent echocardiogram was obtained which showed severe hypoplastic heart syndrome, a severe form of cyanotic heart disease. This family unfortunately had no free medical coverage or health insurance and as per the hospital policy they deposited a reasonable amount on admission. The father and uncle who had accompanied the baby were counseled in detail on the gravity of the situation and critical condition of the baby. A detailed discussion was carried out including the different aspects of disease, treatment options, predicted prognosis and potential cost involved. It was told to them that their baby's condition requires multi-staged cardiac surgeries for which the baby has to be transferred to a specialized center abroad. The issue of 'do not resuscitate (DNR)' was also brought up, as the condition was non-salvageable in our set up. In view of the severity and non-salvageability of the condition, the family agreed to the DNR decision in accordance with the available guidelines.[3,4] The baby's condition gradually deteriorated and no aggressive intervention was offered. The baby died within 2 hours of admission to the unit. This family ended up paying all the costs incurred in the care of the baby. As a DNR decision was taken early, the cost was limited. But one could imagine the cost with continual intensive care management for days with the same outcome. Would a free health coverage plan or insurance have changed the family's decision or baby's outcome? May be not. But this type of emergent case, and many more, reiterate the need for health insurance for all, as recently indicated.[5,6]

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