Pak Armed Forces Med J 2007; 57(2): 151-154

FIELD MEDICINE

FIELD ANAESTHESIA – EXPERIENCE IN UNITED NATION MISSIONS

Naveed Masood, *Syed Asadullah Jafri, **Azam Khan, ***Rashad Siddiqi

CMH Multan, *CMH Rahim Yar Khan, **1 Mountain Field Ambulance, ***CMH Bahawalpur

ABSTRACT

Objective: To communicate the experiences of anaesthesiologists while working in United Nations (UN) peace keeping missions in different parts of the world.

Design: Questionnaire based observational study.

Material and Methods: A questionnaire was sent to anaesthesiologists who had served in UN missions. The response was evaluated by simple percentage.

Results: Problems identified in a UN missions are: setup of operating room, high prevalences of HIV, Hepatitis B virus and Hepatitis C virus among the population of host country, different sources of medical stores, short supply of medical gases and problems related to malaria and its prophylaxis.

Conclusion: The problems can be overcome by prior planning, use of non conventional practices of anesthesia and vigilance in monitoring in operating rooms and post operative recovery units. Optimal utilization of the equipment can be achieved with the help of non governmental organizations.

Keywords: United Nations, anesthesiologist, mefloquine

INTRODUCTION

United Nations (UN) has sent many peace keeping missions since its inception to various parts of the world. Pakistan has been a major contributor of peace keepers to these missions. Peacekeeping troops are called when civil unrest and war between different factions or different countries forces a UN resolution to be passed in the security council.

The UN requests contributing countries to provide the troops for peace keeping. The troops and personnel are provided by the contributing country under a memorandum of understanding (MOU). This MOU may be of three types; in one all the logistic supplies are provided by the UN and the country only provides the personnel, called the "dry lease". In "wet lease" all logistic supplies are borne by the country providing the personnel. A third type is actually a mixture of both depending on MOU. These logistic include the supplies of medical stores. The equipment provided by the UN come from donation by affluent countries, some equipment is bought from the market as well.

Peacekeepers work under a mandate passed by the security council. Provision of medical treatment to the host local population is usually not a part of this mandate, but the peacekeepers usually provide medical treatment to the local population in emergencies on humanitarian grounds. They may provide some medical relief to the local population in the form of free camps to help displaced and war affected people.

The medical facilities are level I clinic (Battalion level), level II hospital (Sector or Brigade level), Level III (Force level). Level IV is usually a tertiary care hospital outside the mission area for referral of patients requiring advance medical treatment. Surgical

Correspondence: Maj Syed Asadullah Jafri, Graded Anaesthetist, Combined Military Hospital, Rahim Yar Khan.

intervention starts from the level II hospital [1].

Pakistan is the largest contributor of peacekeeping force for UN. The level II hospitals move with the Pakistani contingent. In East Timor Pakistan has provided a surgical team which included one surgeon, one anesthesiologist and three operating room assistants in a level II hospital. The author(s) have served in two different missions of Somalia and Sierra Leone.

The purpose of this article is to highlight the experience of anaesthesiologists a UN mission and give certain suggestions that may be useful for the anesthesiologists who will participate in such missions in future.

MATERIALS AND METHODS

A questionnaire was sent to the anesthesiologists who had served in any UN mission (table-1). The proforma was sent by registered mail to the anesthesiologist in Pakistan and by e-mail to those who were still serving in various missions. The questionnaire inquired about their experience in the mission area and the problems they had faced in context of their working in the operating room. The response was evaluated by simple percentage.

RESULTS

Sixteen out of 21 (76%) anesthesiologists responded and they belonged to different UN missions in three continents. Most replies were received from anesthesiologists who have served in Sierra Leone. Sixty-eight percent of the respondents had reported that local population was entitled for emergency surgery. Hospital equipment was provided by Pakistan in 62% of the respondent case. Medical gas supplies were inadequate in 32% of the respondents. Fifty-six percent and 50% of the anesthesiologist were not familiar with the use of field vaporizer and oxygen concentrator, respectively. The dependant peacekeeping troops were on malaria prophylaxis using Mefloquine (62%) and Chloroquine (12%). The results are summarized (table-2).

DISCUSSION

Anesthesiologists are always part of the level II hospital in any UN mission. Their job starts from the inception of the mission, that is, to setup a field hospital, which includes a fully equipped and functional operating room (OR). The number of ORs depends upon the level of the field hospital [1]. Construction of a modern OR is, of course, not possible and generally the OR is made in containers with inadequate size. Initially, in a mission area, once the peacekeepers are making ground they may face challenges from the fighting rebels and medical facility may be made in altogether field area [2].

The peacekeepers are called after civil unrest and anarchy in the country so the medical facilities are generally in ruins in these countries. They provide medical facilities to the local population on the humanitarian grounds. Most of the missions are performed in the African continent, where the prevalence of Hepatitis B, Hepatitis C and Human Immune Deficiency Virus (HIV) is high [3]. The occupational hazard of acquiring these diseases is more concerning at these missions. This becomes more important in cases of emergency, when there is no time for pre-operative screening of the patient.

Prophylactic anti-malarial are given to all the peacekeepers posted to malaria endemic zone. Because Plasmodium falciparum is resistant to chloroquine in most part of the Africa, part of South America and part of South East Asia, chemo prophylaxis of falciparum malaria is done with drugs other then chloroquine. These include Mefloquine, Malarone (combination of adovaquone and proguanil), doxycycline and combined chloroquine and proguanil [4-6]. All the peace missions in Africa (except Somalia) were prescribed Mefloquine 250mg weekly, as the prophylactic drug for the Malaria. Post emergence delirium after general anaesthesia has been described with mefloquine [7]. It is also associated with prolongation of QT interval. This necessitates intraoperative

monitoring and vigilance in postoperative room.

Discontinuation of anti-malarials is not possible in emergency cases as Mefloquine is administered in weekly doses. Cessation of chemoprophylaxis is not justified in elective cases and one should switch to other prophylactic drugs till surgery is over. No data is available on the interaction of other drugs with the anesthetics

Provision of drugs and medical stores is another problem in such mission. There are two major concerns in this regard. One is the supply of the medical gases i.e. oxygen and nitrous oxide. Very large quantities of the gas cylinders cannot be stored and as it is not possible from economic and logistic point of view. The regular supply of oxygen and nitrous oxide is usually not available in the war torn country and main source of oxygen is concentrators. Nitrous oxide is not available in these countries. These gases are required in the OR as a vital part of the anesthesia services and life saving medicine. Short supply of the medical gases can be best managed by use of local blocks, regional blocks and ketamine anesthesia [8,9]. If general anesthesia is a necessity then low flows with close circuit should be used.

Table-1: Study proforma.

1. Name: .....
2. UN mission: .....
3. Local population was entitled for medical treatment in your mission:
   a. Whole population
   b. Only emergencies
   c. No entitlement
4. Pakistani contingent was on: dry lease/ wet lease.
5. Hospital equipment was provided by: UN/ Pakistan/ both
6. Manufacturing countries (in case equipment is provided by UN) .....
7. Medical Gas supplies: Adequate/ Inadequate
8. Are you familiar with the use of Vaporizers? Yes/ No
9. Are you familiar with the use of Oxygen concentrators? Yes/ No
10. Do you and your fellow peace keepers were receiving Anti malaria prophylaxis? Yes/ No
11. If yes which drug(s) were use: .....

Table-2: Results.

Proforma sent to	21
Reply from	16 (76%)
Missions	
Sierra Leone	5
Burundi	2
Bosnia	2
Slovenia	2
East Timor	1
Liberia	2
Somalia	2
Entitlement of local population	
Whole	2 (12%)
Only emergencies	11 (68%)
No entitlement	3 (18%)
Hospital equipment provided by	
Pakistan	10 (62%)
UN	1 (6%)
Both	5 (31%)
Medical gas supplies	
Adequate	11 (68%)
Inadequate	5 (32%)
Familiarity with the field vaporizer	
Yes	9 (56%)
No	7 (43%)
Familiarity with use of Oxygen concentrators	
Yes	8 (50%)
No	8 (50%)
Malaria prophylaxis for peace keepers	
Chloroquine	2 (12%)
Mefloquine	10 (62%)
No prophylaxis	4 (25%)

Standard anesthesia practice do not allow the use of draw over vaporizers in the OR but in the field conditions and in military anesthesia practice, the use of draw over vaporizers and oxygen concentrators may result in further increasing the economy of the medical gases [10-12].

Second problem is unique in the UN environment. The drugs and the machines issued by the UN are from different countries and their brochures are different languages, which are not understood by the users [1]. Intra operative monitoring is usually compromised due to lack of monitors [9]. Taking help from the staff of the non government organizations who are also working in the same area can solve this particular problem. In Sierra Leone a Swedish surgeon helped us in using an autoclave and a field anesthesia machine donated to the UN by the Swedish government.

CONCLUSION

Peace keepers have there own set of problems in their tasks. The anesthesiologists of the peacekeeping missions do face their tasks with their colleagues. Their job is compounded by the problems in the host country. But prior understanding of the problems before departure will result in better patient management.

REFERENCES

1. Department of Peace keeping operations United Nations. *Medical support manual for United Nations peacekeeping operations*. New York United Nations; 2003; 2: 3s
2. Omar MI, Sohail S. Morbidity spectrum in the Veterans. *J Coll Phys Surg Pak* 2003;13 (4):185-6.
3. Ogunbodede EO. HIV/AIDS situation in Africa. *Int Dent J* 2004; 54(6 suppl 1): 352-60.
4. World Health Organization. *International travel and public health 2002*. Geneva: WHO; 2002.
5. Bradley DJ, Bannister B. Guidelines of malaria prevention in travelers from the United Kingdom for 2001. *Commun dis public health* 2001; 4: 84-101
6. McCarthy JS. Malaria chemoprophylaxis: in war and peace. *Med J Aust* 2005; 182(4): 148-9.
7. Gullahorn GM, Bohmen HR and Wallace MR. Anaesthesia emergence delirium after mefloquine prophylaxis. *Lancet* 1993; 341: 632.
8. Brock-Utne JG. Anaesthesia in military conflicts: Toward simpler, safer and higher standards. *Mil Med* 1992; 157: 229-30.
9. Baskett JP. The trauma anesthesia/critical care specialist in the field. *Crit Care Clin* 1990; 6: 13-24.
10. Eltringham RJ and Varvinski A. The oxyvent. An anaesthetic machine designed to be used in the developing countries and difficult situations. *Anaesthesia* 1997; 52: 668-72.
11. Suzuki T and Asai S. A simple anaesthetic system with oxygen concentrator for war and disaster situation. *Masui* 2003; 62; 662-5.
12. Schnieder G. Oxygen supply in Africa: A personal experience. *Int J of Tuberc Lung Dis* 2001; 5: 524-6.