

The South African Academy of Family Practice's Rural Health Initiative (RHI) is proud to be able to bring you the following section of the journal, that concentrates on issues pertaining to rural health in South Africa. We seek to provoke discussion on these issues and would encourage anyone interested in rural health to offer contributions to future issues.



☀ Teaching home-based care volunteers: The Tzaneen experience ☀

The Tzaneen AIDS Committee was formed during an AIDS Workshop on the 14 May 1998. The AIDS committee was given the task of developing a strategy to deal with HIV/AIDS in the sub-district. The committee consisted of Department of Health (DOH) representatives from each of the five local service areas in the sub-district; NGO's in the area and other government departments such as Education and Police. A task team was established to take the initiative to implement a project for the support of AIDS patients. A strong partnership was established between the Department of Health and CHoiCe (an NGO which formerly trained health workers for the farms in the area).

The task team started to develop a course to train home-based care volunteers. (The co-ordinator from CHoiCe later participated in the development of the national curriculum for home-based care volunteers.) Each year since 1999, a number of volunteers have been identified and trained. The team used a helpful book, the *AIDS Home Care Handbook*, developed by the WHO in Uganda. It is a very user-friendly tool for training rural people.

Those of us who participated in the development of the course tried to make it as interactive and participatory as possible. We have actively tried to restrict formal lecture teaching to the absolute minimum. From the beginning we tried to involve people living with HIV/AIDS in the training as we felt that they were the people who would know best how they want to be cared for. A trainer from the NGO and the DOH representative usually facilitate the courses. One of the people living with HIV/AIDS also participates in the facilitation. Lately we have also involved the active volunteers in the

facilitation of courses. They serve as role models.

Group discussions form the basis of the teaching. Skills are taught through role-plays. Procedures are demonstrated and have to be practised and evaluated. The volunteers have to implement practically whatever they learn on the course. We try to let them learn as much as possible through personal experiences and reflection on them. Counselling skills are basically all learnt through role-plays and practising it repeatedly.

After we started with the project, we learnt that to try to give home based care for AIDS patients only is impossible. "Nobody" is dying of Aids in the villages. People die of a wide variety of illnesses ranging from "TB" to being "bewitched". The project started to focus on any person who needs care: from old people with chronic illnesses and strokes, to terminal cancer patients and others suffering of the effects of poverty. We let volunteers see all house-bound people with problems. In this way, dealing with chronic illnesses has become part of the course.

Another valuable lesson we learnt was that we initially focussed too much on educational techniques. As a result, volunteers were more interested in teaching others than supporting patients at home. We subsequently reduced the teaching skills training in the introductory course and focussed more on support and the value thereof. We also had to do nursing skills later in the course, after the volunteers were well established as home carers, otherwise they were more keen to try out their nursing skills in the clinics than in people's homes.

As we participated nationally in the development of the curriculum, we also agreed to a 59-day course that is

accredited with the national qualifications board. The full course consists of several modules:

The Modular Courses which form the Volunteer Training Course

HOPE course (introduction to home-based care)	10 days
TB and DOTS	5 days
Lay counselling course	10 days
Basic first aid	3 days
Basic home nursing including palliative home care	10 days
Practical basic nursing in a hospital	14 days
Practical basic nursing in a clinic	7 days
Total	59 days

The HOPE course is an introduction to home based care and ideally forms the first module. The name of the course is an acronym derived from **H**ome based care **P**atient and family **E**ducation project. Its main focus is to change participants' attitudes towards HIV/AIDS and people living with the disease. We use the *Aids Home Care Handbook* as a course guideline. The teaching is done mainly using interactive learning methods. Story telling plays an important part as well as participation through role-plays and quizzes. The *Aids Home Care Handbook* is written around the story of one woman's life: how she grew up, got married, became infected, and lived and died with the illness. Further there are lots of group discussions dealing with issues such as stigma, fear, anxiety and issues of death and dying. When the home-based care volunteers have completed the HOPE course, they are introduced to their local communities

during a community meeting as well as to the sisters at the local clinic.

Topics addressed in the HOPE course

- The role of HBC volunteers caregivers.
- Caregivers' role in the Health Service.
- Recording and reporting (developing a portfolio).
- General disease and illness in the community.
- Myths and facts about HIV/Aids.
- Behaviour and illness.
- Social factors and illness.
- The stages of HIV/Aids.
- The immune system.
- The effect of diet on illness.
- Different kinds of STI's.
- Prevention of STI's and HIV.
- The connection between STI's and HIV infection.
- The role of Social support in HIV/Aids.
- Spiritual needs of patients.
- Culture and religion and illness.
- Social Welfare Services: Different grants and its requirements.
- The role of volunteers in social support.
- Confidentiality and HIV/Aids.
- The basic principles of infection control.
- How to prevent the spread of HIV during home based care.

The DOTS (directly observed therapy short-course) module lasts five days. The aim of this course is to introduce the home-based care volunteers, or caregivers as they are called, to tuberculosis and its treatment. Topics include the history of TB; community support and TB; TB diagnosis and treatment; side effects of TB drugs and the role of DOTS in TB control. The caregivers are also equipped to work in teams and to handle conflict. At the end of the course they are formally introduced to the district TB team.

All caregivers attend a ten-day lay counselling course. As this course is aimed at providing them with counselling skills, it makes use of role-plays as the main training tool. Some of the theory is presented by means of stories.

The content of the lay counselling course

- Theory of counselling:
 - Counselling in different contexts

- Culture and bereavement
- Counselling skills:
 - Listening skills
 - Facilitation skills: reflecting, clarification, summarising
 - Problem solving
- Legal aspects of counselling:
 - Confidentiality
- Different types of counselling:
 - Pre- and post HIV test counselling, couple counselling, ongoing counselling, bereavement counselling.
- Understanding death and dying.
- Stress and burn-out in caregivers.

The First Aid course is a three-day course based on the St Johns Ambulance College basic life support course.

The Basic Home Nursing course takes ten days. Its aim is to teach the caregivers patient assessment skills and basic nursing skills (see list below).

Basic nursing procedures taught to home based care volunteers

- Hand washing
- Putting on and taking off gloves
- Wound care
- Dealing with bleeding and blood
- Lifting a patient out of bed
- Using a wheelchair
- Care of pressure parts
- Bathing a patient in a bath or shower
- Bathing a baby
- Bed bathing
- Washing hair in bed
- Hand and foot care
- Feeding a patient
- Motion exercises for bedridden patients
- Giving a patient a bedpan
- Catheter care
- Monitoring input and output
- Monitoring vital signs
- Mouth care
- Observing urine for abnormalities
- Assisting a patient who are coughing
- Assisting a patient who are vomiting
- Disposal of sputum
- Collection of sputum
- Giving medicines
- Applying a condom

Palliative care is also dealt with during the basic home nursing course. This covers topics such as bereavement, death and dying, social support, stages of accepting death, caring for the carer, pain control, and grief. In this part of the course there is also a focus on communication skills.

The final 21 days of the official training course as registered with the qualifications board is practical nursing in the hospital and in the clinic. Fourteen of these days have to be spent in the hospital and seven days in a clinic.

Up to this stage our volunteers were trained as time and funds allowed. Now, after four years, the first volunteers will do their practical nursing in the hospital and the clinic. This delay was caused by difficulties in registering them with the Nursing Council to work in the hospital or clinic. We will still have to learn what the impact of this part of the training will be on the caregivers.

Our aim is to have volunteers complete the full course over a two-year period. In between the different courses they work as volunteers in their respective villages. During the monthly feedback meetings in-service training is ongoing. Originally we wanted to have the additional 21 days of training be done as monthly in-service training meetings (over the two year training period), but the national home-based care committee did not favour this suggestion.

Presently the trainers facilitate the meetings. We believe this part of their training is the most important. It gives them the opportunity to discuss problems as they encounter them. As a group the caregivers then develop their own solutions to their problems. Our aim is to give them more professional support during these meetings. We also feel that we should develop the debriefing aspects of the meetings to assist the caregivers to deal with their own feelings of loss.

Resource Material used in training

1. Comprehensive Home/Community Based Care Training Manual by the National Department of Health.
2. Learner Handbook for the Training of Home/Community Based Care-givers by the National Department of Health.
3. Aids Home Care Handbook - WHO
4. HIV/Aids home-based care - WHO
5. Counselling course facilitators guide - National Department of Health
6. Tuberculosis: A training manual for health workers by National Department of Health
7. Fill the country with DOTS: A community based tuberculosis treatment training manual by Marlene Coetzee and Elitha van der Sandt (Chasa TB Alliance Project)
8. Primary Aids Care by Clive Evian - Jakana Education 2000.

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Apnoea following the use of suxamethonium in a rural hospital

Introduction

The rapid onset, reliable muscle relaxation and fast metabolism of suxamethonium chloride is yet to be beaten by any short acting, rapid onset, and non-depolarizing muscle relaxant.^{1,2,3} In most rural hospitals, family practitioners administer general anaesthesia on a regular basis for both elective and emergency procedures. This article relates an unusual experience of apnoea following the use of suxamethonium during an emergency operation in a rural South African hospital.

The patient

Ms. MM, a 22-year-old G2, P1 (non-alive) was prepared for an emergency caesarean section (C/S) due to foetal distress. Her last delivery was by a C/S in 1998 but the indication was unknown and the baby died post-operatively. A quick pre-operative assessment of the patient revealed mild pallor, blood pressure of 91/57 mmHg and pulse rate of 84 beats/minute. The heart sounds and chest were essentially normal. General anaesthesia was planned for the procedure. Drugs used for pre-medication were aluminium hydroxide 30ml orally and metochlorpamide 10mg intravenously. After pre-oxygenation, rapid sequence induction was done with thiopentone and suxamethonium. Anaesthesia was maintained with 50% nitrous oxide in oxygen and enflurane, in a semi-closed circuit with leak, and alcuronium 10mg administered for muscle relaxation. On successful completion of the operation, nitrous oxide and enflurane were discontinued, and 100% oxygen administered. Reversal of neuromuscular (NM) blockade was initiated with atropine 1mg and neostigmine 2.5mg. The patient did not initiate spontaneous respiration after 10 minutes and the reversal agents were repeated but with no response. The blood pressure, pulse, ECG and oxygen saturation were all within normal values throughout the operation, which lasted one hour. Deep tendon reflexes were depressed and the urine output was 200ml over the one-hour operation.

An assessment of apnoea probably due to suxamethonium was made. Blood

was taken for electrolytes and phosphate. Serum pseudocholinesterase level could not be done immediately in this rural setting but blood was taken for the test to be done at the nearest referral centre. Fresh frozen plasma was given after which she commenced spontaneous breathing. She was then extubated with 100% oxygen saturation, blood pressure of 114/60 mmHg and pulse of 116 beats/minute. Follow-up review revealed that the patient suffers from epilepsy with mild mental retardation, and had taken traditional medication prior to surgery. The blood results were essentially normal except for a slightly low serum calcium and haemoglobin of 8.5g/dl. The s-pseudocholinesterase level was later reported to be 2372 iu/L (normal: 3700 - 9300 iu/L). The patient was informed of what happened post-operatively and possible explanation for the incident. Mother and baby were later discharged in good health.

Discussion

Apnoea due to suxamethonium results from atypical or abnormally low pseudocholinesterase activity. It occurs in about 1 in 3,000 for the homozygous and 1 in 50 for the heterozygous population. Four allelic genes have been identified with resultant ten genotypes of which six show significant reduction in their ability to metabolize suxamethonium.⁴ Homozygous, atypical patients have about 1% the normal affinity for succinylcholine and exhibit prolonged neuromuscular blockade following suxamethonium administration, up to 8 hours (compared to 30 minutes for the heterozygous). In addition, low levels of pseudocholinesterase are found in severe liver diseases, anaemia, pregnancy, and drug interactions with ecothiopate, non-depolarizing muscle relaxants and lithium carbonate. Other conditions such as electrolyte disturbance, myopathies, acid-base imbalance, hypothermia and antibiotics may prolong neuromuscular blockage. A number of lessons were learnt from this experience namely:

- The importance of a detailed history and exploration of any reaction(s) to anaesthetic agents from previous operations during the pre-operative

assessment of any patient undergoing anaesthesia cannot be overemphasized. This was not adequately done in this patient.

- Mechanical ventilation is the mainstay management for apnoea due to suxamethonium. The rationale for use of fresh blood products is based on their high levels of pseudocholinesterase but should be weighed against the attendant risk of transfusion infections and reactions, though this is very low.⁵
- Current obstetric practice recommends the use of regional anaesthesia for C/S except when contraindicated or where there is lack of anaesthetic skills. Regional techniques offer fewer complications and in trained hands, give good outcomes for both mother and baby.⁶

Conclusion

This article demonstrates one of the many daily challenges faced by family practitioners practising in rural settings. Until a new drug is found which matches the qualities of suxamethonium, family practitioners that administer general anaesthesia must be conversant with the management of this uncommon complication following use of suxamethonium.

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