



Health care in times of crisis

- Viral transfusion transmissible infections among donors
- Current crisis in human resources for health in Africa
- Helping patients overcome weight gain and obesity
- How to make fuel-efficient stoves

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SSMJ SOUTH SUDAN MEDICAL JOURNAL
ISSN 2309 - 4605

Volume 7. No. 1. www.southsudanmedicaljournal.com

A Publication of the South Sudan Doctors' Association

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The South Sudan Medical Journal is a quarterly publication intended for Healthcare Professionals, both those working in the South Sudan and those in other parts of the world seeking information on health in South Sudan. The Journal is published in mid-February, May, August and November.

Reviewers are listed on the website

Health care in times of crisis

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“Providing health services to displaced and mobile communities is a challenge”

The ongoing conflict in South Sudan has exacerbated the acute health needs of the people in the country. Prior to the events of December 15th, the world’s newest nation struggled with some of the worst health indicators in the world – low immunization rates, high disease morbidity burden, and the world’s worst maternal mortality rate. Now, the ongoing conflict has brought additional complications.

Since the beginning of the conflict, more than 720,000 people in South Sudan have been displaced from their homes. More than 74,000 have sought refuge on a UN base, but 8 of 9 people displaced are largely outside these safe havens, seeking shelter in neighbouring countries, with nearby relatives, or most commonly in the open wilderness.

Providing health services to displaced and mobile communities is a challenge, and coordinating responses is of utmost importance. Emergencies like South Sudan’s require humanitarian surge response – vaccination campaigns, mobile clinics, increased disease surveillance – all complicated by access of insecurity and inaccessibility.

In order to reach those most vulnerable, the MoH and humanitarian organizations have targeted interventions to reduce morbidity and mortality. There have been several measles campaigns in response to outbreaks in UN camps in Juba and Bor. Reproductive health units are being established to treat both women and men, as well as provide services for victims of gender based violence, which often surges during times of violence and displacement. Efforts are being made to assure that displaced patients on HIV or TB treatment can access their drug regimens, as disruption can have serious health consequences.

Unfortunately, there are thousands of people in need who are still unreachable. Surgical capacity is limited in South Sudan, and active conflict over the past two months has often displaced the precious few medical staff from where they are needed most. Several organizations have reported staff fleeing violence with supplies into the bush in order to continue to treat patients. Despite ongoing efforts, without access to those desperately in need, treatable ailments like malaria, dehydration, wound complications and respiratory infections will cause unnecessary death.

Recognizing the severity and urgency of the situation, on February 11th, the UN Emergency Coordinator, Valerie Amos, announced that the UN had elevated South Sudan to a Level 3 Emergency. This will increase resources available to South Sudan for the response, including in health, in order to further the reach of humanitarian activities.

The UN cluster system coordinates response efforts in the main sectors of humanitarian action. With the shift to Level 3 Emergency status, the clusters will have more resources at their disposal, which will hopefully result in improved coordination and swift, efficient responses to the ongoing emergency.

While the crisis has affected much of South Sudan, about two-thirds of the country is operating at or near normal levels. Health partners are continuing to deliver static health services where able, and building the national systems. Strengthening the overall health system assists current and future emergency responses by providing a stronger base from which to respond.

Viral transfusion transmissible infections amongst blood donors in Maridi County Hospital, South Sudan

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Introduction

The Republic of South Sudan gained independence in July 2011 after nearly two decades of civil war. The increase in cross border traffic following independence and the return of displaced nationals, may have unforeseen effects on the health of the population. The pattern of diseases across East Africa is defined by infectious conditions such as malaria and HIV. It has been suggested that the relocation of individuals from hyperendemic countries, such as Uganda, may influence the prevalence rates of these infections in South Sudan.

This research focused on the viral transfusion transmissible infections (VTTI), Hepatitis B and C, and HIV. Little is known about the level of these infections in South Sudan, although details from neighbouring countries would suggest that both HIV and Hepatitis B are endemic.

Objectives

To determine the prevalence of HBsAg, HCV and HIV among blood donors in Maridi between January 2007 and December 2011 and make recommendations on prevention and treatment options.

Methodology

This retrospective study reviewed the records of volunteer adult blood donors from the Maridi County Hospital laboratory from 2007-2011. Data was anonymised. The statistical analysis calculated 95% confidence intervals with significance taken as $p \leq 0.05$ using a Fishers Exact test.

Ethical approval for this research was provided by the ethical committee in the Office of the Director of Research, Monitoring and Evaluation, Ministry of Health, which was shared with the State Ministry of Health and the County Health Department.

Setting

Maridi County borders the Democratic Republic of Congo to the south. The projected population of Maridi

is 108,629 based on the 2008 national population census results (with 3% annual population growth and returnees factored in). The population is served by a network of 3 Primary Health Care Centres (PHCCs), twenty Primary Health Care Units (PHCUs) and by Maridi County hospital. Maridi hospital admits 4,000-5,000 patients annually. Admissions are triaged to assess the need for a blood transfusion, with common causes being injury, anaemia attributed to malaria and obstetric emergencies.

There is no blood bank in Maridi hospital. A blood donation is requested from the family when the haemoglobin is below 4g/dl without any other symptoms or 4-6g/dl with clinical features of hypoxia, acidosis, hyperparasitaemia of more than 20% and impaired consciousness [1]. Following standard safety procedures¹ the preliminary donation is made onsite before the sample is cross-matched for blood type, only those compatible samples are then screened for viral infections.

A number of rapid serological tests for transfusion transmissible viral infections are available onsite, supplied by the United Nations Development Programme (UNDP) under the Global Fund. These tests include the Hepatitis B surface antigen (HBsAg) rapid Dip-strip (Acon Laboratories Inc), Hepatitis C virus (HCV) rapid test (Span Diagnostics, Ltd), Determine HIV1/2 test strips (Alere Medical Co.) and UniGold HIV1/2 (Trinity Biotech Plc). All compatible blood samples are screened with all four tests, and only those deemed to be safe and uninfected are utilised for the transfusion.

Results

Over the 5 years (2007-2011) 324 individuals received a blood transfusion. The most common recipients were

¹ These safety procedures refer to the small preliminary donation made on site. This is firstly cross-matched for compatibility with the intended recipient, if the donor is suitable the blood sample is then screened for the listed infectious agents. It is only those individuals who are clear of infection and compatible with the recipient who are called upon for a larger collection for the purpose of transfusion.

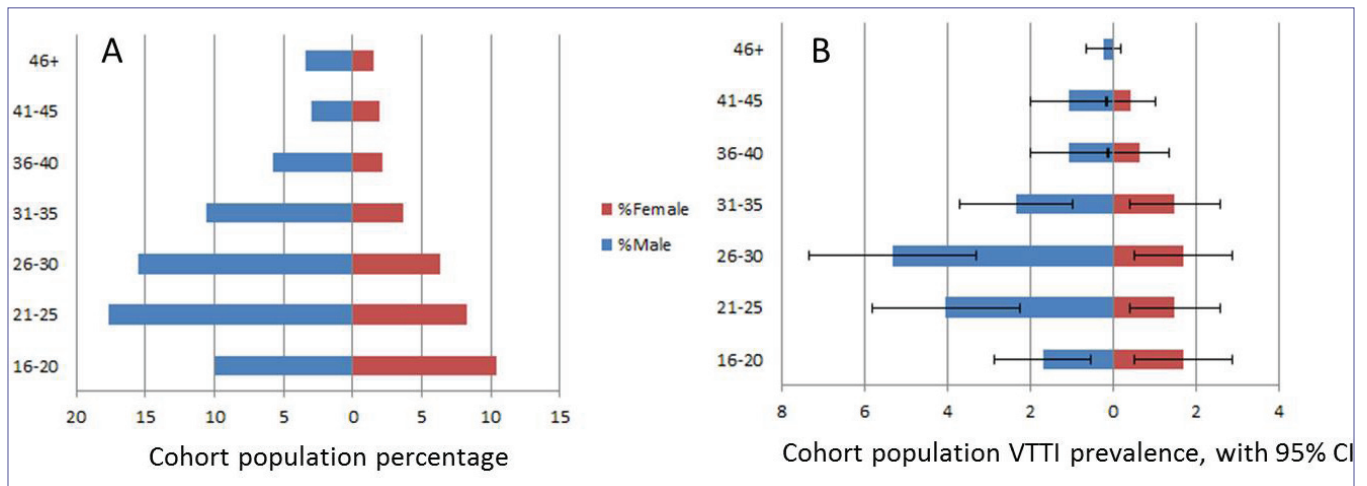


Figure 1: Population pyramids (a) for the blood donation cohort of known age (n=471), (b) based on the population VTTI prevalence with 95% confidence intervals.

children under the age of five (183/324) and women over 16 years of age (80/324).

In the same time period, records exist for 496 blood donations. The mean age of donors was 28 years (range of 16-58) (Figure 1a). The representation of the different blood groups, rounded to the nearest decimal point was A 26.4%; B 15.7%; AB 1.4% and O 56.4%. Men were more likely to donate than women (322/496).

Within this donor population 110/496 donors were found to be infected with antigens for at least one VTTI, of which 13 were mixed infections (11.8%, 95% confidence interval (CI) = 5.8-17.8%) and 97 were single infections (88.2%, CI = 82.1-94.2%), no triple infections were detected (see Figure 2). In terms of diagnostic events, Hepatitis C seropositivity was 9.3% (CI = 6.7-11.8%), Hepatitis B surface antigen at 8.9% (CI = 6.4-11.4%) and HIV at 6.7% (CI = 4.5-8.8%), see Figure 2.

The prevalence of transfusion transmissible infections in male blood donors was 74/322 (23.0%, CI = 18.3-27.6%) compared to 36/174 (20.7%, CI = 14.7-26.7%) in female donors, however there is no significant difference between the sexes (Fishers exact test, $p=0.57$). In terms of age analysis, 25 individuals were discounted as the age was not recorded, one of these was found to have antigens for HCV. Of the remaining cohort two thirds (77/109) of the infections were among the age bracket of 21-35 years (see Figure 1b), no statistical differences occurred between the genders at any age group.

Discussion

The age of blood donors seems to be weighted towards those individuals of less than 40 years of age. This distribution is in keeping with that of the country's population structure more generally where prolonged civil unrest has left 79% of the population being less

than 30 years old [2]. The demography of blood group distribution within the studied population is not dissimilar to the most recent information available from Sudan, the main differences being due to the low representation of AB (1.4 %) compared to a country wide average of 7% [3].

Of the 496 blood donors, only 174 were females. This gender bias may reflect that one of the main conditions requiring a blood transfusion was a complication of child birth. The immediate donors are usually the spouse which may address why the number of male blood donors is higher than females. Culturally and socially, it is also reported to be more acceptable for the blood donation to be made by a male member of the family [4].

HIV was reported at 6.7%. This is twice the national average reported from antenatal clinics (ANC) across the country in 2009 [5], and is similar to findings from the 2011 National HIV indicator survey from Uganda [6]. Information from the Western Equatoria State also indicate an increase in the recorded occurrence of HIV. A study in 2012 from ANC and voluntary counselling and testing facilities reported a seropositivity of 12.1% (CI = 9.6-14.1%) [7].

Sudan has been classified as a country with high endemicity of Hepatitis B virus (HBV), historically rated at 8% in 1996 by the World Health Organisation [8]. In keeping with our findings the situation appears largely unchanged with the seroprevalence in eastern Sudan reported at 8.2% (n = 376) [9], 5.1% in the north of the country [10] and 5.6% in the central regions [11]. However caution has been urged regarding the sole reliance on HBsAg for the detection of this infectious agent, with an increased sensitivity reported when the core antigen is used as a the diagnostic target [12].

The seroprevalence of Hepatitis C found in this study is

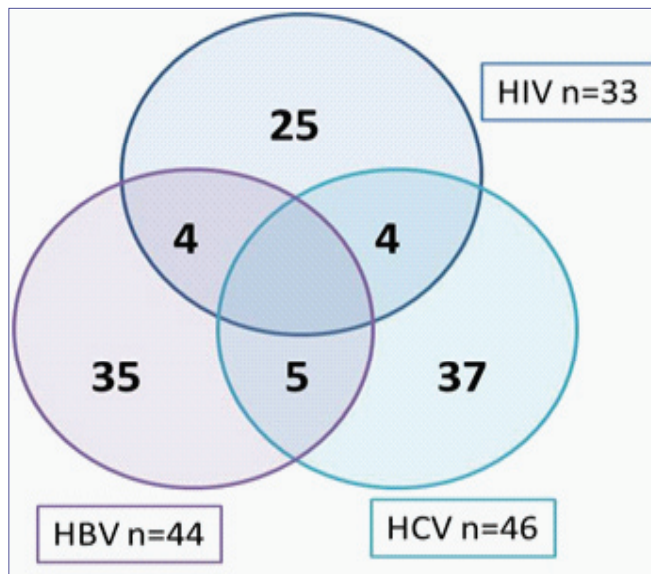


Figure 2. The distribution of single and mixed infections of transfusion transmissible viral infections as detected within specified blood donating cohort of this study (n=496)

significantly higher than that of previous reports (Fishers exact test, $p < 0.0001$), for example in South Darfur state in 2009 the detected prevalence amongst 400 male blood donors was 0.65% [4], while in southern Sudan 3% of 666 outpatients subjects were positive for anti-HCV antibodies [13]. Unpublished work reported suggests a seroprevalence in asymptomatic blood donors of 4.4%, but no other details are forthcoming [14].

It is too early to determine if the disease landscape will alter in South Sudan with the return of peace. However, this research provides a useful baseline upon which to base further studies, and highlights the need for awareness of the risk of transmission. The elevated level of HCV within this studied population highlights the need for further investigation, while HBV prevalence can be targeted with the incorporation of vaccination into the routine expanded programme of immunisation across the country.

Conclusion

This study provides an insight into the prevalence of these viral infections within the community local to Maridi hospital. It reaffirms the need for continued surveillance of blood donations prior to use. Sustained health care promotion, the availability of treatment, health promotion and appropriate management must be ensured to prevent the further transmission of these infections.

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The current crisis in human resources for health in Africa

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Overview

The current crisis in human resources for health in Africa has reached a serious level in many countries. A complex set of reasons has contributed to this problem, some exogenous, such as the severe economic measures introduced by structural adjustment, which often result in cutbacks in the number of health workers while some endogenous reasons, including misdirected human resource and training policies, weak institutions, and inappropriate structures [1].

Dimensions of the human resource crisis:

The number of trained healthcare workers in Africa has always been inadequate, but in recent years, many countries have experienced serious shortages of almost all cadres due to economic and financial difficulties and incomplete civil service reform [1]. In general, the health personnel to population ratios in Africa have been low and have always lagged behind the rest of the world. The WHO World Health Report 2006 identified 57 countries facing a critical health workforce crisis. Each of these countries has less than 23 health workers (doctors, nurses, midwives) per 10 000 people – the minimum necessary to achieve an 80% coverage rate for deliveries by skilled birth attendants or for measles immunization [2].

Sub-Saharan Africa (SSA) faces the greatest challenges. It has 11% of the world's population and carries 25% of the global disease burden, and it has only 3% of the global health workforce and accounts for less than 1% of health expenditures worldwide [2]. The total workforce of doctors, nurses and midwives in African is estimated at 590,198 with an estimated shortage of 817,992 and required percentage increase of 139, which is highest compared to other parts of the world - see Table 1.

The provider-to-population ratios persistently remains high with most countries having one doctor per

10,000 or more of the population [3]. Many countries do not meet WHO's "Health for All" standard of one doctor per 5,000. Even those that do have enough doctors, geographic maldistribution is so severe that there may be a 1:500 ratio in the city (e.g. Nairobi) while remote Turkana District suffers from a 1:160,000 ratio [Support for Analysis and Research in Africa, SARA 2003].

The immediate causes of the crisis appear to be due to poor economic growth and successive fiscal difficulties. On the one hand, the ability of African governments to attract, retain, and maintain the morale of professional health workers is reduced by budgetary stringency, as treasuries are unable to upgrade salaries and working conditions, especially of skilled staff. On the other hand, because medical and nursing training in Africa is mostly government-provided or financed, governments' capacity to train health workers has also been severely limited due to fiscal crises. This dual pressure on the production and maintenance of health workers has created shortages in key cadres such as doctors, clinical officers, medical assistants, nurses, midwives, and laboratory technologists/technicians [1].

Even though the immediate determinant of the HR crisis

Table 1. Estimated critical shortages of doctors, nurses, and midwives by WHO region

WHO Region	Number of countries		How many <5 have marked fingers		
	In countries with shortages	With shortages	Total workforce	Estimated shortage	Percentage increase required
Africa	46	36	590,198	817,992	139
Americas	35	5	93,603	37,886	40
South-east Asia	11	6	2,332,054	1,164,001	50
Europe	52	0	NA	NA	NA
Eastern Mediterranean	21	7	312,613	306,031	98
Western Pacific	27	3	27,260	32,560	119
World	192	57	3,355,728	2,358,470	70

WHO April 2006. Available at www.who.int/nhr/2006/media_centre/WHR06_slides_en.pdf

is budgetary, the underlying causes can be traced to policies toward public-sector employment that African countries have adopted since independence. Generally, African governments stretched the size of the civil service faster than their economies grew. Employment growth has been favored over income growth in the public sector, driving down the real wages of civil servants. Consequently, the total number of health workforce in most African countries is actually quite large, but most of the workers are unskilled or lowly trained [1]. Additionally, trained health manpower tends to migrate to the developed countries where they can get better opportunities and earnings.

Production of health workforce has not kept pace with need, especially with the ever-increasing burden of disease brought about by HIV/AIDS and resurgent epidemics. Pre-service training of health workforce in many African countries is funded through their ministries of health. Insufficient funding for the training of medical, nursing, and allied professions results in both low numbers of graduates and poor quality of graduates. HIV/AIDS and resurgent epidemics have increased the burden of disease in Africa, relative to the rest of the world, thus raising the need to produce more trained health workers [1].

Many health workers are ill-motivated since they are inadequately paid, inadequately equipped, infrequently supervised and informed, and have limited career opportunities within the civil service, thus some search for better future both locally and abroad.

Many medical, technical, and managerial positions in health programs and facilities are now unoccupied and scarce medical personnel are often misused for management tasks [1].

Donor resources dedicated for training and HR development, though large, have been poorly coordinated and have not addressed the underlying cause of poor staff motivation [1].

Opportunities and risks to ease the human resource crisis:

Adopt a systems approach in establishing HR problems, improve the HR information base, and conduct a human resource inventory and planning exercise which, in themselves, can be instructive to MOHs [1].

To break the cycle of high standards–limited entrants–few workers, it is essential that workforce supply restrictions be properly adjusted through professional substitution,

redefinition of functions, reforms in the staffing standards, and refocusing of pre-service training [1].

To make performance scores really significant, adopt a decentralized responsibility of hiring and payment of staff, such that local managers should have the authority to employ, deploy, promote, discipline, and fire health staff [1].

Clarify the definition of staff responsibilities and performance, and keep them informed of changes and inspired.

Gradually shift towards results-oriented performance management. Inadequate performance of health staff should be corrected through appropriate training and coaching so that they could achieve their own individual results. And appropriate incentives and/or recognition or any other sort of motivation should be provided for excellence in performance.

Conclusion

Frontline health workers are essential to promoting sustainable community health systems and mobilizing for medical emergencies. Many individuals, families and communities are central in promoting health though they are neither paid nor specialized. In low-income communities, informal, traditional, and community health workers are essential, supplemented by associate professionals. They provide links to other cadres through referral systems, and they take the lead in health system innovation [4].

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Helping patients in Uganda overcome weight gain and obesity using motivational interviewing

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Introduction

Obesity is one of the fastest growing health problems in Uganda and across the world and its rising prevalence is placing additional strain on medical resources. At its simplest level obesity is a consequence of unhealthy lifestyles. Preventing its spread in Uganda will rest on the ability of society to motivate individuals to make positive healthy choices in their daily lives and many of the same techniques may be applicable to the situation in South Sudan.

In response to the upward obesity trend UN member countries have initiated a 2013-2020 action plan to limit and treat the complications of cardiovascular disease, diabetes and the anticipated rise in obesity-related cancers across the world. The plan recognises the increased global burden of non-communicable diseases and identifies four main obesity-related objectives [1].

1. To reduce the risk factors for non-communicable diseases that stem from unhealthy diets and physical inactivity.
2. To increase overall awareness and understanding.
3. To encourage the development of global, national, regional and community policies to improve diets and increase levels of physical activity.
4. To monitor scientific data and key influences on diet and physical activity.

This commitment has encouraged large-scale investment in educational programmes, economic policy proposals and industry self-regulation. Many national governments are discussing the introduction of taxes for fatty foods and pressuring the private sector producers to decrease the quantity of fats and trans-fats in their products [2]. Despite the extent of the problem and early commitments little has actually been done yet, particularly in lower and middle-income countries. As a consequence it falls to practicing doctors and clinicians to help prevent the spread of the disease and to manage individual patients with obesity. Aside from avoiding complications with the use of pharmaceutical interventions the best improvements come with successful lifestyle change but this can be extremely difficult - whether in Uganda or elsewhere in

the world.

Motivational interviewing (MI) is a goal oriented style of counseling that aims to harness the patient's internal motivation to change and has gained a body of evidence for its efficacy. It has been widely applied cross-culturally for a variety of problems including addiction, chronic disease and obesity. A few training programmes have been set up in Uganda [3]. In Africa more broadly the technique has been experimentally effective in improving compliance with HIV medication, in coping with chronic disease and in mosquito bed net uptake [4]. The technique originated in America where it was found to be an effective way to enhance the motivation to change in patients suffering from alcohol dependence.

Epidemiology

Starting in high-income countries in the 1970's urbanization, changes in diet and increasingly sedentary lives conspired to initiate the epidemic that has since spread to middle and lower income countries [5]. In 2008, the worldwide prevalence of obesity was estimated to be 502 million, whilst 1.46 billion were estimated to be overweight, including 170 million children [6]. In Uganda the WHO estimated in 2010 that roughly 20% of the population were overweight and between 3.8 -5.0% were obese [7]. Another study of obesity in Uganda found 4.4% of individuals in Kampala in a sample of 683 were obese and also discovered that the rates were far higher in women than in men [8].

Complications of obesity

Obesity is caused by an excess energy intake over energy output [9]. This simple definition hides a complex aetiology whereby genetic predispositions, epigenetics, early life development and behaviours determine the expression of the obese phenotype. Obesity is also "the normal response, by normal people, to abnormal conditions" and in this regard one can consider the modern urban environment to be the abnormality [10].

It is possible to live for many years with obesity but it depends greatly on the severity as to the effects it has on the patient. In more severe cases quality of life is significantly reduced due to difficulties with mobility, pressure sores,

infections, deteriorating vision, painful and uncomfortable oedema and a disabling reduction in the general fitness required to partake in the social activities of daily life. The longer an individual remains obese the greater the likelihood of deterioration in cardiovascular function due to the build up of atherosclerotic plaques, proliferative microvascular changes and a pro-inflammatory state. If these insidious changes are not rectified the patient risks chronic kidney disease and peripheral and coronary artery disease amongst other things [11].

Beyond a certain point the complications of obesity may become irreversible, as with the case of diabetes or coronary artery disease, and pharmaceutical or surgical management in addition to advice on lifestyle changes may be necessary. Of course, in less severe cases lifestyle change may be all that is necessary [12].

Management of obesity

Little can be done currently about the genetic predispositions of individuals although it may be possible sometime in the future. Likewise epigenetic changes and early life development are not factors that can be reversed once they have occurred. For obese adults with related complications a number of pharmaceuticals can help limit the risks of future adverse events. Anti-hypertensives, statins and hypoglycaemics can decrease the lifelong risks associated with high blood pressure, high cholesterol and hyperglycaemia but this may prove expensive and difficult to maintain and does not address the underlying causes [12]. Surgery can also help with procedures such as the gastric band but as always there are risks associated. The best treatment will always combine these solutions with support to change behaviour.

Motivational Interviewing (MI)

MI is one possible solution that can help obese patients change their lifestyle and has been used in Uganda and across Africa and the rest of the world for numerous lifestyle/behaviour change interventions[13]. It is a form of focused counseling developed by clinical psychologists Prof W.R. Miller and Prof S. Rollnick and can be undertaken by a trained practitioner in a short 10-minute interview [14]. It was originally developed from clinical experience with alcohol dependence and describes a method to help patients change their behaviour through developing their personal motivations and overcoming ambivalence.

MI appears to work well across different cultures and it has now been adapted to assist patients to change behaviours related to obesity by focusing on cutting down on alcohol intake, stopping smoking, eating healthy food and exercising regularly. A meta-analysis of motivational

interviewing in obesity showed a significant reduction in body mass compared to the controls of the order of 1.5kg [15] across eleven studies. In this regard, MI seems to have a useful place in enhancing the weight loss efforts of individuals and could make a significant difference to quality of life. The technique is being encouraged within the British National Health Service (NHS) and has been taught to medical students in their clinical years across the UK. Although currently used only for certain conditions in the NHS it may be used more widely in the future and its adoption elsewhere in the world may be beneficial.

Traditional forms of counseling are non-directive and client led, meaning that the therapist encourages the patient to explore their thoughts and feelings and does not set an agenda. MI differs because the therapist directs the client strategically to consider how willing they are to change on a particular subject. The therapist is, in many ways, searching for and questioning ambivalence on a given topic.

In order for a doctor, or any other health professional, to become a successful motivational interviewer they advise the practitioner to develop four skills [16]:

- The ability ask open ended questions
- The ability to provide affirmations
- Capacity for reflective listening
- Provide summary statements

As an example, a patient could be guided through the interview using a table such as the one below. Examples of useful questions might be, “would you like to see a difference in your current situation?” or “if you changed how do you imagine your life might be better?”

It is also essential that the practitioner develop these skills in the context of a non-confrontational, non-judgmental and non-adversarial manner and with warmth and genuine empathy. The counseling is focused on identifying the patient's values and motivations and exploring any discrepancy between the patient's life as it is and the way

Table 1. Example of Motivational Interviewing
(From <http://spectrum.diabetesjournals.org/>)

Thinking about the costs and benefits of change What specific behavior change are you considering?.....		
	STAY THE SAME	MAKE SOME IMPROVEMENTS
Benefits	I like:	I will like:
Costs	I don't like:	I won't like:
Create some ideas and reflections for each of the four boxes above. This will help to clarify your thoughts about what you want to do next.		

they would like it to be. Since first being developed as a method to try and help patients with alcohol dependence MI has been revised and applied increasingly to health problems caused or exacerbated by habitual behaviours or ambivalence.

Motivational interviewing was so well received by those around the world interested in behaviour change that it initially spread before any meaningful evidence had been collected. Rollnick, one of the founders of the technique, has suggested that this is because MI is just the formalization of techniques and intuition that clinicians have used for hundreds of years, and to a certain extent we perhaps all use in helping one another in daily life. Another likely reason for its early and fast adoption is the lack of good alternatives. Techniques such as behavioural therapy require specialist training, whilst other methods, such as education and awareness raising take time to successfully make changes in society. Of course, MI does not always work, and is not a panacea. It depends on the patients' wishes and practitioners ability but where a desire for change exists it can be a powerful way of enhancing it.

Conclusion

Obesity is one of the fastest growing health problems in the world and its rise will be difficult to stop. Global efforts to fight the rise have currently concentrated on large-scale education and awareness raising programmes, changes to government policy and the law and the involvement of the food industry and civil society. Unfortunately, little has yet been done in large parts of the world to make any observable change.

In Uganda rates of obesity are also rising and one of the most difficult tasks in treatment is helping individuals to change their behaviour. There are only a few successful strategies that doctors can adopt and one of the most promising is MI. MI has an increasing evidence base for efficacy in obesity and it appears to work well in different cultures. It is also inexpensive to learn and can be undertaken in a short 10 minute interview. As an additional tool for doctors in Uganda it could prove beneficial alongside the more traditional pharmaceutical treatments.

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Halitosis - a review

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Introduction

Halitosis (bad breath) is an oral condition characterized by unpleasant odours from the oral cavity. It is estimated to be the third most frequent reason for people seeking dental care, following tooth decay and periodontal disease [1]. In 90% of cases the causes of halitosis arise in the mouth and caused by deep carious lesions, periodontal diseases, oral infections, peri-implant diseases, pericoronitis, mucosal ulcerations, impacted food or debris, factors causing decreased salivary flow rate and tongue coating [2]. The tongue is a major site of oral malodour [3].

Aetiology

The unpleasant smell originates mainly from volatile sulphide compounds (VSC). Tonzetich identified hydrogen sulphide, methyl mercaptan, methyl sulphide as the main factors. These compounds result from the proteolytic degradation by predominantly anaerobic gram negative oral microorganisms of various sulphur-containing substrates in food debris, saliva, blood and epithelial cells [4]. Several microorganisms recovered from periodontal lesions of gingivitis and periodontitis produce large amounts of these volatile sulphur compounds. VSC levels in the mouth correlate positively with the depth and number of periodontal pockets and bleeding. Oral malodour can also arise from the posterior dorsal tongue.

The tongue, with its large and papillary surface area, can retain large amounts of desquamated cells, leucocytes and microorganisms. Studies of the microflora on the tongue dorsum of subjects with and without halitosis, show that the predominant species in test and control groups were *Veillonella* *Prevotella* species. Greater species diversity was found in the halitosis samples compared with controls. The increased species diversity found in halitosis samples suggests that halitosis may be the result of complex interactions between several bacterial species [5].

Prevalence

There are no universally accepted standard criteria, objective or subjective, that define a patient with halitosis [6]. There are few studies that have assessed the prevalence of oral malodour in the general population, with rates ranging from 22% to over 50%. In addition, approximately 50% of adults and elderly individuals emit

socially unacceptable breath, related to physiological causes, upon arising in the morning [7]. Studies suggest that oral malodour might be caused mainly by tongue coating in the younger generation and by periodontal diseases together with tongue coating in older groups [8]. Studies have shown that use of the toothbrush less than once daily was the factor most strongly associated with self-perceived halitosis [9].

Management

Miyazaki established the recommended examination for halitosis and a classification of halitosis with corresponding treatment needs [10]. Accordingly, different treatment needs (TN) have been described for the various diagnostic categories. The responsibility for the treatment of physiologic halitosis (TN-1), oral pathologic halitosis (TN-1 and TN-2) and pseudo-halitosis (TN-1 and TN-4) rests on dental practitioners. However, extra-oral pathologic halitosis (TN-3) and halitophobia (TN-5) should be managed by a medical specialist with psychiatric / psychological help. Table 1 describes the five different categories of treatment needs according to diagnosis [10].

The management of halitosis starts by taking a detailed history of the condition including an enquiry into the duration, severity and impact on the patient's everyday life. Examination involves clinical, radiographic, and special tests. The contributing medical conditions, once identified, are referred for treatment accordingly. Special tests are performed to detect the foul-smelling VSCs along with the associated bacteria.

Interdental cleaning and toothbrushing are essential mechanical means of dental plaque control. Both remove residual food particles and organisms that cause putrefaction. A combination of tooth and tongue brushing or toothbrushing alone has a beneficial effect on bad breath for up to 1 hour (73% and 30% reduction in VSCs, respectively [11]). Two weeks of regular tongue brushing or scraping by a group of patients free of periodontitis resulted in negligible reductions in bacteria on the tongue, whereas the amount of tongue coating decreased significantly. Therefore, tongue cleaning seems to reduce the substrates for putrefaction, rather than the bacterial load [12].

Table 1: Treatment categories and treatments needed

Treatment Category	Action Required
TN-1	Explanation of halitosis and instructions for oral hygiene (support and reinforcement of a patient's own self-care).
TN-2	Oral prophylaxis, professional cleaning and treatment of oral diseases, especially periodontal diseases.
TN-3	Referral to a medical specialist.
TN-4	Explanation of examination data, further professional instruction, education and reassurance.
TN-5	Referral to a clinical psychologist or psychiatrist.

Chemical reduction of microbial overload

Chlorhexidine is a cationic bis-biguanide, with a very broad antimicrobial spectrum. Its antibacterial action can be explained by disruption of bacterial cell membrane and increasing bacterial cell permeability resulting in cell lysis and death. Because of its strong antibacterial effects chlorhexidine rinsing provides significant reduction in VSC levels organoleptic ratings. 0.2% chlorhexidine mouth rinse produced significant reductions in volatile sulphur-containing compound levels and in organoleptic scores [13].

Triclosan is a broad-spectrum antibacterial agent and has been found to be effective against most oral bacteria. It has a good compatibility with other compounds used for oral home care. The anti-VSC effect of triclosan seems strongly dependent on the solubilizing agents. Clinical studies have shown that mouth-rinsing with triclosan solubilized in sodium lauryl sulphate, propylene glycol and water gave a marked and long-lasting anti-VSC effect. It cannot be excluded that sodium lauryl sulphate contributed to the observed anti-VSC effect [14].

Essential oils - Essential oils, including hydro-alcohol solutions of thymol, menthol, eucalyptol, and methyl salicylate, have been used in mouthwashes to prevent periodontal disease. Anti-plaque and anti-gingivitis activity has been demonstrated in several studies [15].

Cetylpyridinium chloride - Quaternary ammonium compounds, such as benzalkonium and cetylpyridinium chloride, inhibit bacterial growth, but reviews concluded that the results were modest for plaque and equivocal for gingivitis. A cetylpyridinium chloride rinse used in a 6-week pre-brushing study failed to confer any additional benefit to oral hygiene and gingival health compared to a control rinse [16].

Conversion of Volatile Sulfide Compounds

Elements such as zinc, sodium, tin and magnesium are thought to interact with sulphur. The mechanism proposed is the ions oxidize the thiol groups in the precursors of volatile sulphur-containing compounds [17]. Morning breath odour can be reduced successfully by the sole use of an amine fluoride - stannous fluoride-containing mouth rinse twice daily. This reduces the bacterial load in the saliva and retards plaque formation [18]. Unfortunately, both cupric and stannous ions have the potential to discolour teeth, either as a result of sulphide formation on the teeth after extended periods of use or the precipitation of dietary chromogen.

Chlorine dioxide - The use of chlorine dioxide associated with chlorite anion has been shown to result in oxidative consumption of amino acids such as cysteine and methionine, which are precursors of VSCs [19]. Thus, clinical use of this mouth rinse can be expected to reduce oral malodour by reducing concentrations of VSCs. Chlorine dioxide, a strong oxidizing agent, consumes oral substrates containing cysteine and methionine, thus preventing the production of VSCs.

Masking the malodour

Mint toothpaste, mouth rinses, sprays and chewing gum controls halitosis with pleasant flavour and fragrances, they increase salivation thus reducing the pH of saliva [20].

Effective combination of agents

Chlorhexidine and zinc mouth rinses have a strong effect on volatile sulphur-containing compounds and is effective for at least nine hours. Control rinses with chlorhexidine or zinc alone had a moderate and strong effect for one hour, but this effect diminished with time, respectively, fast and slightly [21].

Cetylpyridinium and zinc ions mouth rinses have a good synergistic effect on the levels of volatile sulphur-containing compounds after one hour but minimally above the effect of zinc alone [21].

Conclusion

An oral source is the main cause of breath malodour. Dental clinicians have the responsibility for diagnosis and treatment. Treatment should be centred on reducing the bacterial load by effective mechanical oral hygiene procedures. A multidisciplinary team may be required for some patients.

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Contemporary Psychiatry in Africa: A Review of Theory and Practice

ISBN – 9966-7249-9-0

By Prof David Musyimi Ndeti and Christopher Szabo

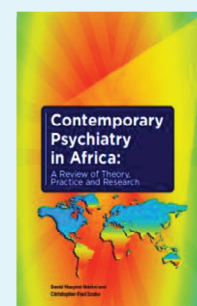
This book harnesses the collective wisdom of African Psychiatry and therefore serves as a departure point for ongoing efforts to refine practice in accordance with the best practice and local needs.

There are a number of chapters dedicated to a range of conditions, covering the most prevalent as well as some emerging conditions ranging from HIV related psychopathology to eating disorders. Additionally, the book provides a focus on a related and pertinent Sub-specialist field – that of neuropsychiatry.

There is a chapter devoted to child and adolescent psychiatry – a sub-specialist area that is sorely underserved. The elderly too are not forgotten in this book. Whilst much is spoken of the youth, it is well to consider the ageing members of society. Psychiatry and the law have also been adequately tackled through a chapter on forensic mental health.

The book is a ‘must-read’ for academicians, researchers and practitioners in different areas of mental health. Postgraduate students pursuing various aspects of mental health, undergraduate medical students and diploma medical students will find this book quite ideal. The book can be purchased from Kennedy Chadeka, Acrodile Publishing Ltd, Nairobi, Kenya. www.acrodile.co.ke

Note: the above review was provided by the publisher and does not necessarily reflect the opinion of SSMJ.



Medicine in the 1950s in South Sudan: Amputation for a puff adder (*Bitis arietans*) envenomation in a child - 1954

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Introduction

Diaries spanning three decades (1943-1964) have been discovered that tell the story of the life of missionary nurses, doctors and surgeons working at the Lui and Leer Hospitals in South Sudan (then known as Southern Sudan). The medical facility at Leer during this period covered a 300 miles radius serving approximately 60,000 of the Nilotic Western Nuer tribe [1]. It was among these records that the following case description was found.

The puff adder (*Bitis arietans*) is one of the commonest African snakes, causing more bites in animals and humans than all other species of snake put together in sub-Saharan regions. It commonly inhabits the banks of the Nile [2].

The venom of the puff adder causes specific cytotoxic, fibrinolytic, platelet-inhibiting, pro-thrombotic, vasodilating, cardiodepressant, and neurotoxic effects [3-8]. When envenomation occurs in a human tissue necrosis, coagulopathy, hypotension, thrombocytopenia and spontaneous bleeding have all been reported [9].

Case Report

In 1954 a Nuer boy presented to Leer Hospital with a large wound on his lower right leg. The injury was such that the fibula was exposed and the foot gangrenous with necrosis spreading halfway to the knee. The injury arose from a puff adder bite while walking on the bank of the Nile. The father took four days to transport the patient in a basket to the hospital downriver in a canoe (see Figure 1). There was no anti-venom available at Leer and no records of any drugs being administered. There was access to penicillin. The child underwent a below knee amputation from which he recovered (see Figure 2). He remained at the hospital to work. The procedure that was performed is summarised below from the operative textbook used at the time.

"Below-knee amputations should leave a stump 6-7½ inches long in a man; longer stumps only increase the risk of circulatory troubles. The patient is in the dorsal position with a tourniquet applied to the thigh. A single anterior flap



Figure 1. Dr. James West (Grandfather of Charles and Stephen West) examining the child (West family photograph).

is marked out at the appropriate level and its length made equal to the diameter of the limb and its width half the circumference at the point of bone section. The corners of the flap are rounded and the skin reflected proximally. A transverse incision across the back of the limb at the level of the base of the flap cuts everything down to bone. The muscles and interosseous membrane are divided and the tibia bared of periosteum for 1 inch before being cut transversely with a saw. The tibia is rounded anteriorly and the fibula cut 1 inch above the tibia. Vessels and nerves are treated as already described, but the muscles are not sutured and the skin is closed.

Messrs. Desoutter recommend a course of exercises with an elastic accumulator and advise a crepe bandage applied to the stump from above downwards. Muscular development is thus encouraged, and a firm, tapered stump made ready for the permanent limb in six to eight weeks from the date of uncomplicated amputation [10]."

Discussion

Envenomations from puff adder bites remain an important presentation for African medical centres and there are a few reported cases in Europe and the USA [11-15]. Warrell et al [16] recommend 80ml of South



Figure 2. The child after the operation with hospital orderlies and father (West family photograph)

Africa polyvalent antivenom intravenously. This results in an 80% survival among patients with dangerous envenomations. It relieves hypotension and bradycardia reduces the degree of necrosis.

The successful administration of anti-venom is not always straight forward. Warrell et al [16] also describe a case where no anti-venom was available and amputation was refused by the patient's family. They presented only three hours after the bite and received dextrose saline to maintain blood pressure. Two days later the limb was cold, anaesthetic and pulseless below the knee. Amputation was eventually attempted on the twenty-third day but the patient died post-operatively. Lavonas et al [9] report a case where a bite to the right ring finger eventually caused necrosis, despite administration of anti-venom. The finger was amputated and the patient's condition improved markedly afterwards.

Bey et al [17] published a case from the USA where administration of anti-venom was delayed due to difficulty identifying the exotic nature of the bite and logistical issues locating and transporting anti-venom from a zoo 950 miles away. This resulted in a 20 hours delay and the patient developed necrosis around the bite site on their right index finger. Debridement of the affected area was carried out and viable tissue was found underneath, so amputation avoided.

Necrosis is more likely to occur when anti-venom is either unavailable, its administration delayed or envenomation too severe for it to be effective. If necrosis occurs then wide surgical debridement should be performed [16]. If the tissue is not viable amputation should then be considered urgently. The case reported here demonstrates that even in the most difficult situations it is still possible to preserve life.

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Winchester - Yei Hospitals Link

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This article is an update about the partnership between Yei Civil Hospital (YCH) and the Martha Clinic in Yei, South Sudan with Hampshire Hospitals NHS Foundation Trust (HHFT), in particular the hospital in Winchester.

Our hospital to hospital link began in November 2010 with a fact finding visit set up by a couple from Winchester, John and Poppy Spens, who have been connected to Yei and the Martha Primary Health Care Clinic for a long time. We found YCH had been running with only one doctor. During our stay new doctors arrived and over the three years since then they have become extremely experienced. We greatly admire their dedication and skills.

We returned a year later with a group of two doctors, three midwives, an electrical engineer and a chemical engineer. (The midwives described their visit in SSMJ May 2012). The clinicians worked on the wards and taught nursing and midwifery students in the training college which is also on the hospital campus. The two engineers fixed hospital equipment. A special aspect of the link group is that those who feel they are on good salaries buy their own tickets and visas leaving any funding for those who would otherwise find it difficult to come. In the UK a small amount of money became available to support links through the Tropical Health and Education Trust (THET).

We obtained funding for a programme over two years looking at how observations were made and used to manage treatment and also a grant for 18 months to repair equipment supporting the clinical work. The two programmes have run side by side so although the clinicians were funded to come more frequently on every visit they collected information to prepare for the next visit of the engineers.

We focussed on maternity with visits from midwives and an obstetrician, paediatrics with paediatricians and a neonatal nurse and surgery with an orthopaedic surgeon and a surgical nurse. Two physicians worked on the medical ward. In every clinical area both national and visiting staff learned from each other.

In maternity we concentrated on newborn resuscitation and care of sick babies with our neonatal nurse teaching how to pass a nasogastric tube if a baby had feeding difficulties and the method of calculating how much



Figure 1. Practising resuscitation (Nancy MacKeith)

they should be fed. In paediatrics our doctors supported the difficult work of diagnosis without the full range of laboratory tests which are available in the UK coupled with speeding up treatment as much as possible.

In surgery our orthopaedic surgeon and accident and emergency nurse concentrated on management of fractures on the first visit, but because general theatres were undergoing refurbishment on their second trip they ran an assessment programme for patients with long term orthopaedic problems found by two iNGOs working in the field of disability in Yei. Our group is constantly impressed with the standard of x-rays produced by the radiographer.

General Practitioners (GPs) (family doctors) from the UK have spent time at the Martha Clinic working with staff and teaching and at the training college covering subjects such as public health. Examination questions set by them



Figure 2. Fixing the plumbing (Nancy MacKeith)

have been put into the national list of questions that can be set in training colleges anywhere in South Sudan. The British Medical Association (BMA) bought books for the library and funded one of the GPs to come out and do family planning training. This doctor did a before and after assessment of the level of knowledge of these staff and students. We are very encouraged by their enthusiasm for learning. UK staff also have enjoyed going out with the Martha Mobile Clinic to see village health care.

Timing of visits can be difficult for the UK volunteers having to book holiday a long time in advance and then circumstances change in Yei, We paid for (but are still fundraising!) the renovation of three tukels or little houses that can take two beds each in the hospital staff compound so that we can stay near the hospital to make best use of our time.

An inventory of equipment at the hospital was carried out including the contents of a container of second-hand medical equipment from the United States not compatible

with the voltage in South Sudan which is like the UK. Two transformers were bought including one for a sophisticated ultrasound scanner which was then used for management of early pregnancy problems. Vital sign machines were made to work, and we had brought out two oxygen saturation monitors from the UK charity LifeBox, one for the hospital and one for Martha Clinic. This encouraged staff to follow the WHO Surgical Safety Checklist.

On the second funded medical equipment visit the engineer, who is also an electrician, came back with a new volunteer with plumbing skills. The new volunteer brought out plumbing tools and equipment and worked with the new hospital plumber and his apprentice on mapping the water supply as well as identifying and fixing faults.

The electrician engineer continued to work with our main South Sudan colleague Moses. His growing confidence means he now tackles jobs like electronic repairs that before were outside of his main skillset as an electrician.

Over the time of our link the United Nations Population Fund (UNFPA) has sent long term volunteer staff nurses and midwives, and AMREF (African Medical Research Foundation) has sent specialists in surgery and ultrasound. The British organisation, VSO (Voluntary Service Overseas), have a health programme and three volunteers came to work in Yei health services over the time of our project. One is in County Health, one in the training college at YCH and the one who works on the wards will soon be joined by another colleague. We are pleased to have taken part in the process of supporting YCH and its staff.

The Winchester - Yei Link web address:

<http://www.hampshirehospitals.nhs.uk/about-us/global-health-links/the-winchester-yei-health-link.aspx>

Obituary: Dr. Thomas Lul

Dr. Thomas Lul was killed in crossfire on Christmas Day in 2013 in Bor as he ventured out of a United Nations camp for displaced people. After working under gunfire in the hospital, the 45-year-old was killed outside the UN camp where he had taken shelter with his wife, whom he had married only a week before the war. He was one of 15 doctors who left Canada several years ago to work in South Sudan.

Dr. Lul was among the "Lost Boys" who escaped from civil war in the 1980s and walked to Ethiopia. He was trained as a doctor in Cuba and went to Canada, where Samaritan's Purse supported his trainings and re-location to South Sudan after the war. He was described as a courageous and self-sacrificing man. May his soul rest in peace.



How to make fuel-efficient stoves

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GOAL promotes the use of fuel-efficient stoves (FES) for use by all circle participants in the cooking demonstrations and at home (see NIPP article in *SSMJ* 6 (4) 90). The main reasons why they are beneficial are:

- They reduce the amount of fuel needed and thus the cost of fuel for the household, thus freeing up money to be spent on other items (e.g. an extra type of food from the market, more seeds for the micro-garden).
- Due to the reduced need for fuel there is a decreased impact on the environment, particularly on deforestation in the area.
- The reduced need for fuel also means less time is spent foraging for firewood, a job that frequently falls to women or children.
- In areas where there are tensions between population groups (refugees and hosts, two tribes within an area etc.) the reduced use of resources can help ease tensions

Often communities have their own methodology for constructing FES. So the first step is to investigate what local methodology is used to build FES. This will incorporate only locally-available resources and use techniques of which the community is already aware. This methodology should be used for the NIPP circle project.

FES can be designed for use with different types of fuel; charcoal needs one opening at the front, wood needs one at the front and one at the back.

Figure 1 shows how to construct a FES based on a local design.

Materials

- Well fermented clay soil - this should have been dug



Figure 1. Construction of Fuel-Efficient Stoves – training in Twic County, Warrap State (credit Frank Okello)

and fermented for at least 3 days. The purpose of fermenting the clay soil is to avoid the stove cracking in the process of drying and using it.

- Dried grass - this is spread on the ground to cover the base of the stove so it does not stick to the ground. The grass also helps the FES from coming into contact with dust and dirt.
- Cow dung - this helps to fill the cracks in the stove.
- Water - required for mixing the clay (+ a jerry can for fetching water)
- Hoe for mixing the clay.

Methodology

The site chosen should be flat to provide a level base.

- Draw a line around the outside of the household's cooking pot to determine the size of FES required.
- Cover the circle with grass and then fill the circle with clay to a depth of around 4cm (the base of the stove).
- Build up the walls of the FES using clay until it is about 15-20 cm high, leaving either one hole in the side to allow charcoal to be put in, or two holes (one on each side) to allow wood to be used as the fuel.
- Make a depression on each side of the stove to make handles for carrying the stove.
- Build a platform across the top of the stove and ensure there are several good size holes in this, to enable the heat to rise through the holes when cooking.
- Build up from the platform another 10cm to provide the base for the cooking pot to sit on.
- Allow to dry and then use cow dung to fill in the cracks and any gaps that appear on the stove. It can be used for cooking 1-2 days after construction, provided it has dried.

Acute Brain Stem Infarction – A Case Report

Stephan Voigt Dr. med., Eluzai Hakim FRCP.

Clinical History

A 79 years old lady was admitted with recurrent headaches, a sudden onset of left upper and lower limb weakness and progressive drowsiness.

She had a history of hypertension, transient cerebral ischaemic attacks, hypercholesterolaemia and chronic renal disease presumed to be secondary to renovascular disease. She was treated with regular erythropoietin injections in the Renal clinic.

On admission she had a regular pulse at 70 / minute and blood pressure 165/77 mmHg supine. There were no signs of heart failure. At initial assessment, left hemiparesis and a possible left visual field defect were noted but no overt homonymous hemianopia. The left plantar response was extensor and the right flexor. There was subtle incoordination in the right upper and lower limbs on the finger-nose and the heel-shen tests, respectively at admission but these became more obvious after three days. She had no dysphagia.

Full blood count, liver function tests, chest radiograph and 12 lead electrocardiogram (ECG) were unremarkable. The serum creatinine was 260µmol/Litre (40-90µmol/L and urea 16mmol/L (2.5-7.8mmol/L). The calcium level was slightly elevated to 2.80mmol/L (2.2mmol/L-2.65mmol/L) with serum albumin within the normal reference range for our laboratory, parathyroid hormone and phosphate.

Computed tomography (CT) Brain - at admission 90 minutes post onset of symptoms (Figure 1)

There was a hyperdense appearance of the lumen of the basilar artery and parts of the right posterior cerebral artery suggestive of thromboembolic changes and acute ischaemia. There was no evidence of clearly demarcated ischaemic changes, mid line shift or signs of raised intracranial pressure. No intracranial haemorrhage, haematoma or space occupying lesion was identified. A fusiform dilatation of the left internal carotid artery and middle cerebral artery and an advanced degree of small vessel disease were noted.

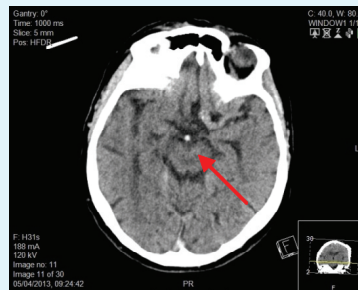


Figure 1: Non-enhanced CT of the brain. Hyperdense appearance of the basilar artery suggestive of a thrombus.

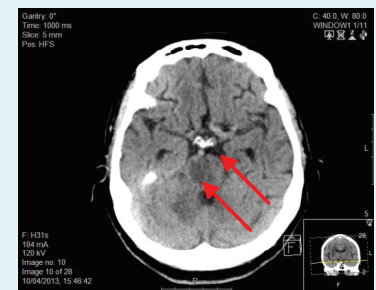


Figure 2: Non-enhanced CT of the brain. Hypodense appearance of brainstem and parts of the right cerebellar hemisphere in keeping with now demarcated subacute ischaemic changes.

CT Brain - 5 days post onset of symptoms (Figure 2). Right pontine and small right cerebellar hemisphere subacute infarcts had now appeared. There was still a little increased density in the basilar and right posterior cerebral artery. No intra-axial or extra-axial haemorrhage was seen on this scan.

From these images it was concluded that there was acute thromboembolic ischaemia of the basilar artery and right posterior cerebral artery.

Management

Thrombolysis was considered but rejected because of the “fusiform aneurysmal” appearance of the left internal carotid artery and middle cerebral artery on the initial brain CT scan. Rehabilitation by the stroke Multidisciplinary Team was instituted in the Stroke Unit.

Comment

This patient presented with acute posterior circulation ischaemic stroke involving the right pons and right cerebellar hemisphere. But for the aneurysms in the left internal carotid and middle cerebral arteries this patient would have benefitted from thrombolysis, possibly with total resolution of her symptoms. The multiple anatomical site involvement suggests thromboembolic stroke which required long term anticoagulation with a vitamin K antagonist. Though atrial fibrillation was not documented on her admission 12 lead ECG part of her management plan included a twenty four hour Holter monitoring to establish the presence of paroxysmal atrial fibrillation. The clinical symptoms described were consistent with pontine and cerebellar lesions. After Multidisciplinary Rehabilitation the patient made slow progress complicated by intercurrent hospital acquired pneumonia.

LETTER TO THE EDITOR

Note: Opinions expressed in correspondence do not necessarily reflect the opinions of the Editorial Board.

Why the high mortality rate of mothers and babies will not end soon in South Sudan

In various parts of the South Sudan health service, especially in refugee camps, INGOs (International Non Governmental Organisations) seem to be employing poor people from Northern Uganda or the Congo (DRC) – sometimes with forged South Sudan nationality, instead of qualified South Sudanese health personnel. Some INGOs in the north appear to be training refugees and employing them as mid-wives on the assumption that certified midwives and other South Sudanese health staff are not available.

Some INGOs employ qualified South Sudanese at the same position scale/category as foreigners but may pay them less. I would like to finish by posing some questions:

1. Why are poor people being imported to South Sudan when local staff need capacity building from well qualified health personal from more-developed countries?
2. Are the certificates of these imported workers properly vetted to ensure that they are not forged?
3. Why are trainings being conducted that do not use the RSS MOH national training guidelines?
4. Why are there different salaries structures for South Sudanese and workers from neighbouring African countries?
5. Why are 'Traditional Birth Attendants (TBAs)/ Community Health workers(CHWs)being employed at County Primary Health Care Centres(PHCCs)/ Primary Health Care Units(PHCUs) while there are qualified but unemployed South Sudanese clinical officers, certificated nurses, medical officers, and community midwives available? Assuming that there are no qualified, certificated, nurses, midwives, clinical officers, medical doctors, and laboratory staff, it would be logical to employ these people but make provision to train South Sudanese to take over from them.

6. Why engage in uncertified training in camps when this should be properly carried out in existing centres such Juba College of Nursing and Midwifery, Maridi Health Training Centre, Rumbek Nursing school etc...?

7. How can the high maternal and neonatal mortality rate be reduced if these practices continue? How can we eliminate this discrimination between Healthcare workers from neighbouring countries and local South Sudanese, while the educated youth in this country are being ignored?

South Sudanese health services providers are facing serious job discrimination. I feel we are being disregarded and are being exploited by unqualified foreign health workers.

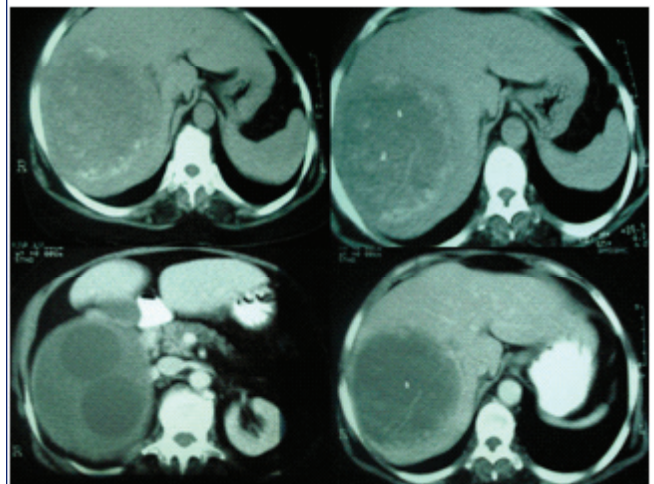
Joseph Duop Liem - Clinical officer

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QUIZ FOR OUR READERS

Lady with fever and hepatomegaly

Case: 54 year old female from an urban area presented with low grade fever, and vague right upper quadrant abdominal discomfort of one month duration. She was a sweeper by profession and had no close contact with pets. On examination she was febrile; the vital signs were stable and she had no jaundice or other stigmata of chronic liver disease. The liver was palpable to 7cms below the right costal margin and 4cms in the epigastrium with a smooth surface, and was tender to palpation: there were no bruits. Her haemogram and biochemical parameters were normal except for elevated alkaline phosphate levels (323 IU/L). These were the contrast enhanced computerized tomography images (see image).



Questions:

- Q1. What is the likely diagnosis?
- Q2. What other conditions should be considered?
- Q3. What is the most likely causative organism?
- Q4. What is the most serious complication of this condition?
- Q5. Are there any serological tests that would aid diagnosis?
- Q6. What is the gold standard treatment of the condition?
- Q7. Which is the preferred drug for the treatment of the condition?

Quiz sent by George Sarin Zacharia

Answers in the next issue of SSMJ

Resources

MALNUTRITION

New WHO guidelines for severe acute malnutrition.

In 2011 19 million children aged under 5 years had severe acute malnutrition (SAM). Most lived in Africa and southeast Asia. SAM was a contributory cause of >7% of all deaths in this age group. WHO has recently published new guidelines for managing SAM. Previously it was recommended that all children younger than 5 years with SAM (a weight-for-height Z score of less than -3 or presence of bilateral oedema) should be admitted to hospital, but now the aim is to treat as many as possible as outpatients. This means they can remain with their carers and are not at risk of hospital-acquired infections and treatment costs are reduced. However children treated as outpatients should be carefully selected, followed closely and given supplies of Ready-to-Use Therapeutic Foods (RUTF). The new guidelines stress that antibiotics should be used only for children with SAM, not those with less severe undernutrition.

The new guidelines say to identify and treat SAM in infants younger than 6 months. The also cover treatment of children with SAM who are living with HIV infection, which is crucial because mortality is highest in this group.

Reference WHO 2013. 'Updates on the management of severe acute malnutrition in infants and children guideline' are available at http://www.who.int/nutrition/publications/guidelines/updates_management_SAM_infantandchildren/en/index.html

Home food vs Ready-to-use- therapeutic food (RUTF) for treating moderate acute malnutrition (MAM)

Authors of a Cochrane review states that "The world needs studies to evaluate interventions to improve the quality of the home diet. Different types of foods may be equally effective in the short term nutritional rehabilitation of children with moderate acute malnutrition (MAM). Most of the research so far has focused on industrialized foods, and on short term outcomes of MAM".

From Breastfeeding Promotion Network of India (BPNI)/ The International Baby Food Action Network Asia (IBFAN Asia). See Improved home cooked food can be as good as RUTF for treating MAM says Cochrane

Vulnerability factors for malnutrition among people living with HIV under antiretroviral treatment in an outpatient clinic: Kinshasa, Democratic Republic of Congo

Significant progress has been made in the fight against HIV/AIDS across the world. However, in sub-Saharan countries, there remain numerous obstacles to achieving treatment goals. The aim of this study was to identify factors underlying vulnerability to malnutrition among people living with HIV (PLWHIV) under antiretroviral treatment (ART) in resource-limited settings.

A cross-sectional study was carried out in May 2010 in Kinshasa, DRC. Baseline characteristics of PLWHIV were analyzed, and statistical analyses were performed in order to compare proportions of low weight, low mid-upper arm circumference, and low body mass index. Further analyses were performed to compare means of anthropometric characteristics according to

sociodemographic, socioeconomic, and clinical characteristics. Multiple regression analyses were used to assess vulnerability determinants for malnutrition following adjustment.

The study identified specific sociodemographic characteristics, socioeconomic level and clinical characteristics (i.e. autonomous activity, appetite, asthenia level, and HIV clinical stage) that were significantly associated with malnutrition in PLWHIV.

Reference K. Tshingani 2013 Science Direct <http://www.sciencedirect.com/science/article/pii/S1730127013001008> Background

Nutritional care and support for patients with tuberculosis Guideline

This guideline from WHO provides guidance on the principles and evidence-informed recommendations on the nutritional care and support for patients with tuberculosis.

Undernutrition increases the risk of tuberculosis and in turn tuberculosis can lead to malnutrition. Undernutrition is therefore highly prevalent among people with tuberculosis. It has been demonstrated that undernutrition is a risk factor for progression from tuberculosis infection to active tuberculosis disease and that undernutrition at the time of diagnosis of active tuberculosis is a predictor of increased risk of death and tuberculosis relapse. However, the evidence concerning the effect of nutritional supplementation on tuberculosis prevention and health outcomes among people with tuberculosis had not previously been systematically reviewed.

Reference WHO 2013. http://www.who.int/nutrition/publications/guidelines/nutcare_support_patients_with_tb/en/index.html

Nutrition Forums and email newsletters

- ProNut-HIV, a moderated e-forum on nutrition and HIV/AIDS,

To subscribe: pronut-hiv-join@healthnet.org

To unsubscribe: pronut-hiv-leave@healthnet.org

To discuss (subscribers only): pronut-hiv@healthnet.org

For help: pronut-hiv-owner@healthnet.org

Archives: www.pronutrition.org/archives.php

- ProNUTRITION <http://www.pronutrition.org> is an information resource that supports health care providers, community health workers, policy makers, and program managers with current, relevant, and practical knowledge and tools for decision-making.
- A wide range of information, such as discussion groups on timely topics, newsletters, documents on-line, links to useful Web sites, guidelines, and assessment tools, are offered on the site to assist individuals in the provision of better care based on knowledge.
- 1,000 days news giving latest nutrition-related news from around the web and world particularly related to the first 1,000 days of life – sign up for updates at <http://www.thousanddays.org/>

INFECTIONS

Umbilical cord infections

Umbilical cord infections (omphalitis) and neonatal sepsis are significant contributors to the proportion of neonatal infections that prove fatal. However, there is little information about cord care practices in sub-Saharan Africa - most of what is known about cord care practices comes from Southeast Asian cultures.

A new research study published in the open-access journal PLoS One, examined practices in Zambia and found a wide variation in knowledge, beliefs, and practices surrounding cord care. It states, 'For home deliveries, cords were cut with non-sterile razor blades or local grass. Cord applications included drying agents (e.g., charcoal, baby powder, dust), lubricating agents (e.g., Vaseline, cooking oil, used motor oil) and agents intended for medicinal/protective purposes (e.g., breast milk, cow dung, chicken faeces).'

Reference Herlihy JM 2013 Local perceptions, cultural beliefs and practices that shape umbilical cord care: a qualitative study in southern province, Zambia. PLoS One. 2013 Nov 7;8(11):e79191 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3820671/>

Drug-resistant tuberculosis in South Africa

Long-term treatment-related outcomes in patients with extensively drug-resistant (XDR) tuberculosis are unknown. This study followed up a cohort of 107 patients between March, 2008, and August, 2012, from three provinces in South Africa, who had been diagnosed with XDR tuberculosis. Available isolates from 56 patients were genotyped to establish strain type and used for extended susceptibility testing.

All patients were treated empirically as inpatients with a median of eight drugs (IQR six to ten). 44 patients (41%) had HIV. 36 (64%) of 56 isolates were resistant to at least eight drugs, and resistance to an increasing number of drugs was associated with the Beijing genotype ($p=0.01$). After 24 months of follow-up, 17 patients (16%) had a favourable outcome (ie, treatment cure or completion), 49 (46%) had died, seven (7%) had defaulted (interruption of treatment for at least 2 consecutive months), and 25 (23%) had failed treatment. At 60 months, 12 patients (11%) had a favourable outcome, 78 (73%) had died, four (4%) had defaulted, and 11 (10%) had failed treatment. 45 patients were discharged from hospital, of whom 26 (58%) had achieved sputum culture conversion and 19 (42%) had failed treatment. Median survival of patients who had failed treatment from time of discharge was 19.84 months (IQR 4.16–26.04). Clustering of cases and transmission within families containing a patient who had failed treatment and been discharged were shown with genotypic methods. Net sputum culture conversion occurred in 22 patients (21%) and median time to net culture conversion was 8.7 months (IQR 5.6–26.4). Independent predictors of probability of net culture conversion were no history of multidrug-resistant tuberculosis ($p=0.0007$) and use of clofazimine ($p=0.0069$). Independent overall predictors of survival were net culture conversion ($p<0.0001$) and treatment with clofazimine ($p=0.021$). Antiretroviral therapy was also a predictor of survival in patients with HIV ($p=0.003$).

It was concluded that in South Africa, long-term outcomes

in patients with XDR tuberculosis are poor, irrespective of HIV status. Because appropriate long-stay or palliative care facilities are scarce, substantial numbers of patients with XDR tuberculosis who have failed treatment and have positive sputum cultures are being discharged from hospital and are likely to transmit disease into the wider community. Testing of new combined regimens is needed urgently and policy makers should implement interventions to minimise disease spread by patients who fail treatment.

Reference Elize Pietersen et al Long-term outcomes of patients with extensively drug-resistant tuberculosis in South Africa. The Lancet, Early Online Publication, 17 January 2014

MISCELLANEOUS

Global Health: Science and Practice

GHSP is a no-fee, open-access online journal at www.ghspjournal.org, aims to improve health practice, especially in low- and middle-income countries. Its goal is reach global health professionals, particularly program implementers, to advance knowledge on practical program implementation issues, with information on what programs entail and how they are implemented. GHSP recently published its third issue at <http://www.ghspjournal.org/content/current> which included following topics:

- Should PEPFAR focus on a broader range of priority health needs?
- How will routine immunization programs ultimately be successful?
- Can community health workers safely and effectively provide injectables in Africa?
- Should pregnancy tests be offered to reduce denial of family planning services?
- What is causing obesity in rural Tanzania?

You can SUBSCRIBE to receive alerts when new articles and issues are published at <http://www.ghspjournal.org/cgi/alerts>

To submit an article go to <http://www.ghspjournal.org/site/misc/fora.xhtml>

Medical Aid Films

You can access a variety of films aimed at a variety of levels of frontline healthworkers in low resource settings at the website: <http://medicalaidfilms.org/our-films>. They are available free (in return for feedback) by download, or on USB or DVD. Our films are available in English and Swahili; and MAF is keen to work with partners who may wish to dub them into local languages.

There are films in the following subjects – most are related to pregnancy and newborn care: Films for Community Health Workers & Communities; Understanding your body / pregnancy; Food for life; Safe Delivery and a healthy Newborn; Obstetric and Neonatal Emergencies; Early Identification of a Sick Child; Films for skilled health workers; Emergency Obstetric and Newborn Care; Ultrasound.

Contact MAF on info@medicalaidfilms.org if you would like to use the films.



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