

Southern Sudan Medical Journal

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A mother with her newly delivered baby at Juba Teaching Hospital (photo by David Attwood)

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To inform, educate and positively influence the
development of Health Services in the Southern
Sudan

Established in 2008. A publication of the St Mary's Juba hospitals link

Editorial: Evidence Based Medicine

Evidence Based Medicine (EBM) is *"the conscientious, explicit and sensible use of current best practice in making decisions about the care of individual patients"*. Components include the use of evidence, clinical judgement and patient preference. Clinical judgement is vital in the evidence based approach to care because the evidence found may not be relevant to a specific patient².

Others³ have added a mathematical dimension to the definition, *"evidence based medicine is the use of mathematic estimates of the risk of benefit and harm, derived from high quality research on population samples, to inform decision making in the diagnosis, investigation or management of individual patients"*.

The agreed classification of evidence based information sources starts with those most likely to provide the best evidence (although there is some overlap between the various types) - and is as follows:

1a. **Meta analysis**

1b. **Randomised controlled trials**

2a. **Non Randomised controlled trials studies**

2b. **Quasi experimental studies**

3. **Descriptive studies**

4. **Consensus Report**

This hierarchy provides a guide to retrieving relevant studies and an orderly way of seeking the best evidence. In order to help you retrieve information, Anne Lancey, in the first of two articles, describes on page 12 a systematic way of accessing literature through Pub Med and other databases.

Finally, to practice EBM, the following steps are recommended:

1. Start with a clinical problem or a question that arises out of the care of a particular patient. Make this into a clear clinical question.
2. Select the appropriate literature database and conduct a search.
3. Evaluate that evidence for its validity (closeness to the truth) and applicability (usefulness in clinical practice).
4. Return to the patient and integrate that evidence with clinical expertise, patient preferences and apply it to practice.

Dr Eluzai Abe Hakim

Editor, Southern Sudan Medical Journal

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A new name and a new website

The Southern Sudan Medical Bulletin has been renamed the **Southern Sudan Medical Journal** and will soon have its own website. Since it was started two years ago the Bulletin has become more widely known (and, we hope, read). It is presently the only medical journal in Southern Sudan. Our aim is extend its reach and to continue to give relevant and valid information to health professionals in Southern Sudan.

The Southern Sudan Medical Journal (previously **Southern Sudan Medical Bulletin**) is a quarterly publication intended for Healthcare Professionals working in the Southern Sudan or those Healthcare Professionals in other parts of the world seeking information on health in the Southern Sudan.

It aims to offer education and information in all specialities and identify research that will inform the development of Health Services in the Southern Sudan. We plan to include reports of original research, critical/systematic reviews, case reports, clinical photographic materials, obituaries, letters to the Editor, use of drugs, medical news of public interest, nutrition matters, public health issues and stories of the health services in the Southern Sudan.

The Journal is a publication of the St Mary's Juba link. It is published in February, May, August and November and is free online at <http://www.iow.nhs.uk/juba> (under journals).

We encourage readers to print copies and pass them to colleagues.

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Evaluation of surgical outcome after cataract surgery with lens implantation using air or viscoelastic to maintain the anterior chamber

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Abstract

Introduction: Findings from specular microscope studies have demonstrated increased endothelial cell loss associated with the use of air for lens implantation. The objective of this study was to evaluate the surgical outcome after cataract surgery with lens implantation using air or viscoelastic to maintain the anterior chamber

Design: Retrospective record analysis

Subjects: Record cards of patients operated for cataract at Sakubva Eye Unit, Mutare, Zimbabwe in the period January – December 2002

Main outcome measures: Operative complications, post operative keratitis, presenting visual acuity at discharge, two and six weeks postoperatively.

Results: Record cards of 315 patients were analysed, 207 (65.7%) had lens implantation under air, 108 (34.3%) had implantation under viscoelastic. Presenting visual acuity at discharge, two and six weeks postoperatively was better or equal to 6/18 in 36.7%, 34.4% and 52% of patients implanted under air compared to 40.7%, 35.6% and 38.3% of those implanted under viscoelastic. Post operative keratitis was observed in 14% of patients implanted under air and 12% of those implanted under viscoelastic. Vitreous loss was experienced by 1.9% and 5.8% of patients implanted under air and viscoelastic respectively.

Conclusion: Despite reports of increased endothelial cell loss associated with use of air for lens implantation, this study finds no difference in surgical outcome between patients implanted posterior chamber lens under air or viscoelastic.

Introduction

Contact between intraocular lens (IOL) and the cornea during lens implantation can cause endothelial cell depletion, resulting in development of corneal oedema or bullus keratopathy with subsequent reduction in postoperative visual acuity¹⁻³.

Studies by Boune and Kaufman⁴ have demonstrated that 40-50% of endothelial cells can be lost during intraocular lens insertion. Use of protective substances in the anterior chamber has dramatically reduced endothelial cell loss thus assuring good postoperative surgical outcome. Air used to maintain anterior chamber during lens implantation reduced endothelial cell loss from 32% in lens implantation undertaken without use of air to 15% when air was used to maintain the anterior chamber.

Viscoelastic substances were first used in human implant surgery in 1979 and further reduced endothelial cell loss to 7%. Animal and human specular microscopic studies comparing air with viscoelastic for lens implantation have demonstrated greater endothelial cell protection associated with use of viscoelastic⁵.

Although viscoelastic provides better protection to the endothelium during lens implantation, its use in developing countries is limited by cost and availability. Air on the other hand costs nothing, is always available and does not require packaging or storage since it can be drawn from the atmosphere into a syringe. To our knowledge no study has evaluated surgical outcome in patients' implanted intraocular lens (IOL) under air. In this study we analysed, retrospectively, record cards of patients operated for cataract in our unit in order to identify

any difference in surgical outcome between patients implanted (IOL) under air or viscoelastic.

Method

We reviewed record cards of 450 patients operated for cataract at Sakubva Eye Unit, Manicaland province, Zimbabwe, in the period January to December 2002. One hundred and thirty five cards had incomplete information on relevant variables and were excluded, leaving 315 (70.9%) for final analysis. 207 (65.7%) had lens implantation under air while 108 (35.3%) had implantation under viscoelastic.

All patients were operated at Sakubva Eye Unit, which is the referral centre for eye disease in Manicaland province. Cataract surgery followed a standard technique, which consisted of raising a fornix based conjunctival flap followed by cauterization of superficial episcleral vessels. A posterior limbal incision of approximately 10mm was made with No 15 Bard Parker blade and a short scleral tunnel dissected past the limbus into clear cornea. The anterior chamber was entered with 18-gauge needle and 360 degree can opener capsulotomy performed with bent 27-gauge needle. The nucleus was dislocated into the anterior chamber after hydrodissection and delivered through the wound by expression using simcoe irrigation/aspiration cannula. Residual cortex was aspirated and the anterior chamber (AC) deepened with viscoelastic or air depending on availability. A single piece PMMA IOL (Aurolab India) was implanted in the bag and positioned with a metal loop. The AC was reformed with Ringers lactate and the wound closed with 10/0 nylon in a running or interrupted pattern. Subconjunctival injection of

Gentamicin 0.5ML was given and a combined steroid/antibiotic ointment applied to the fornix. Standard power intraocular lens (18-22 diopters) was used in all patients as preoperative keratometry and A-Scan biometry were not possible in Sakubva eye unit at the time. Visual acuity was assessed without correction on day one and at two and six weeks postoperatively. Slit lamp examination was performed to check for keratitis and other post operative complications.

Information was entered, checked and analysed using Stata software (Stata Corporation, 4905 Lakeway Drive, College Station, Texas 77845 USA). The proportion with visual acuity better than or equal to 6/18, operative complications and post operative keratitis was calculated and compared. Differences between proportions were compared with a student's t-test. 95% confidence interval defined the upper and lower bound of the point estimate. Any difference with a p value <0.05 was considered significant.

Results

The patient's demographic characteristics are shown in Table 1, 107 (34%) were male, mean age was 68.6±10 years, (range 14-100 years) and 69 (25.8%) had co-morbidity. Mean IOL power was 21 diopters (18-22), operative complications were experienced in 25/310 (8.1%) patients and included capsule break (1.3%), vitreous loss (3.9%) and other (2.9%).

Table 1. Demographic characteristics and operative procedures

Characteristic	All	Air	Viscoelastic
Number	315	207	108
Age (yrs) M±SD	68.6±10	69±9.2	67±9.2
Sex (Males))	34.0%	36.7%	28.7%
Operated eye (R)	42%	53%	47%
Co-morbidity (Yes)	25.8%	22.8%	(28.7%)
Operative complications			
1. Capsule break	1.3%	2/14 (1%)	2/11 (1.9%)
2. Vitreous Loss	3.9%	6/14 (2.9%)	5/11 (5.8%)
3. Other	2.9%	6/14 (2.9%)	3/11 (2.9%)
Operating time (M±SD)		12.0±2.8	12.8±3.4
IOL power (M±SD)	21.0	21.2±0.7	21.1±1.3

Post operative visual acuity at discharge

Visual acuity at discharge is shown in Table 2. Two hundred and eighty five (90.5%) patients achieved visual acuity better than or equal to 6/60 while 30 (9.5%) had visual acuity less than 6/60. A non-significant difference of 4% in proportion achieving vision better than or equal to 6/18 was observed between patient implanted IOL under air and viscoelastic (95% CI -0.18 to 0.04, p=0.23). A slightly lower proportion of patients implanted under air achieved visual acuity worse than 6/60 (95% CI -0.14 to 0.01, p=0.054).

Table 2. Visual acuity at Discharge

Visual Acuity	Air No (%)	Visco-elastic No (%)	Difference	95% Conf. Interval	P-value
≥6/18	76 (36.7)	44 (40.7)	4.0%	-0.18 to 0.04	0.228
<6/18 – 6/60	116 (56.1)	49 (45.4)	10.7%	-0.01 to 0.23	0.064
<6/60 – PL	15 (7.2)	15 (13.9)	6.7%	-0.14 to 0.01	0.054
Totals	207	108			

Visual acuity at two and six weeks

Table 3. Visual acuity at 2 and 6 weeks

Visual acuity	2 weeks 270 patients		6 weeks 122 patients	
	Air	Viscot	Air	Viscot
≥ 6/18	62 (34.4%)	32 (35.6%)	39 (52%)	18 (38.3%)
<6/18-6/60	104 (57.8%)	49 (54.4%)	32 (2.7%)	24 (32%)
<6/6 -3/60	14 (7.8%)	9 (10%)	4 (5.4%)	5 (10.6%)
Totals	180	90	75	47

Table 3 shows visual acuity at two and six weeks. 270 (85.7%) returned for the two weeks' review while 122 (38.7%) returned for the 6 weeks review. Visual acuity outcome was similar in the two groups, 34% and 52% of those implanted under air achieved visual acuity better or equal to 6/18 at two and six weeks respectively compared to 36% and 38% of those implanted under viscoelastic. Similarly 7.8%

and 5.4% of patients implanted under air, 10% and 10.6% of those implanted under viscoelastic achieved visual acuity less than 6/60 respectively.

Corneal oedema

Corneal oedema was observed in 42/135 (13.3%). There was no difference in the proportion with corneal oedema in the two groups, 14% in those implanted under air and 12% in those implanted

under viscoelastic, t test [95% confidence interval - 0.01 – 0.10, $p=0.6328$].

Table 4. Postoperative corneal oedema

Post operative complications	Substances used to deepen the anterior chamber		
	Air	Viscoelastic	Total
None	173 (83.6%)	92 (85.2%)	265
Corneal oedema	29 (14%)	13 (12%)	42
Other	5 (2.4%)	3 (2.8%)	8
Total	207	108	315

Discussion

Zimbabwe like other developing countries has a growing number of patients awaiting cataract surgery. Manicaland province with a population of 1.6 million has an estimated 25,000 cases in need of surgery and every year 1600 new cases are added to this backlog. Dealing with such a growing burden of cataract blindness requires a cheaper and faster method of surgery that also guarantees good post operative visual acuity. The number of cases that can be operated at any given time is limited by the availability of a surgeon and appropriate equipment, as well as surgical sundries.

Viscoelastic is a surgical sundry that has become essential in modern cataract surgery. It protects corneal endothelium from damage, shortens surgery time and ensures good surgical outcome. Other protective substances ringers lactate and balanced salt solution (BSS) used for irrigation aspiration of lens cortex and to inflate the anterior chamber during lens implantation. Endothelial cell loss has been estimated in animal experimental studies to be as high as between 40-50% for lens implantations attempted without use of protective substances⁵. Use of air or viscoelastic reduces endothelial cell loss to 17% and 7% respectively⁴.

Viscoelastic substances are expensive and their use is limited by availability. For this reason some surgeons working in resource limited settings have used air to deepen the anterior chamber during lens implantation despite reported incidents of severe endothelial depletion². This study compared surgical outcome in the group of patients who were operated for cataract and either air or viscoelastic was used to inflate the anterior chamber during lens implantation.

The results of this preliminary clinical study suggest that there was no difference in visual outcome or corneal oedema between the two groups. Bourne, Brubaker and O'Fallon² observed in their study that all corneas were clear regardless of the amount of

endothelial cell loss and visual acuity was comparable in the two groups. It could be that the difference in endothelial cell count observed in specular microscopic studies was not high enough to result in observable clinical effect such as persistent corneal oedema.

Some of the advantages of using air for lens implantation include no cost since it can be drawn into a syringe from the atmosphere. It also requires no packaging or storage and does not elevate intraocular pressure postoperatively. Used properly it can enable intra-operative visualization of the disc and macula. The main disadvantage of using air is that it easily escapes from the anterior resulting in repeated attempts at lens implantation with attendant risk of endothelial damage. To implant IOL successfully under air, one should maintain low intra-orbital pressure. This may be achieved mechanically by use of pressure weight or chemically by use of Sodium hyaluronidase (Hyanidase) to enhance redistribution of local anaesthetic into intra-orbital space.

The main limitation of this study is that it is a retrospective analysis of patient records and thus suffers from drawbacks common to this research strategy⁶. The completeness of information obtained from records is often limited and patients were not randomly allocated to each group. Cost implications for use of air for lens implantation in resource poor settings warrants further studies to validate these initial findings.

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We thank the staff of Sakubva Eye Unit for their assistance during the period of this study.

Caesarean Sections at Juba Teaching Hospital 2008 - 2009

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Summary

A summary and analysis of all recorded emergency and elective caesarean sections (CS) performed at Juba Teaching Hospital (JTH), Juba, Southern Sudan from October 2008 to September 2009 was made. During this period 430 CS were performed giving a mean of 1.2 each day, the main reason being cited as obstructed labour. Thirty of the babies delivered by CS died giving a neonatal mortality rate of 7%. Due to various /non-comprehensive reporting methods it is difficult to measure the maternal mortality rate associated with CS. Overall 11.2% of all deliveries were CS, in accordance with WHO targets¹. The majority of caesarean sections were performed using a general anaesthetic or ketamine (79% for emergency and 62% for elective surgery). These rates are much higher than those in the published guidance of best practice in the UK (Royal College of Anaesthetists Guideline 2006)².

Method

Surgical operations performed in each of the three operating theatres at JTH are recorded in logbooks. There is a single handwritten logbook for each theatre, each containing operative data since 2005. The information recorded for all operations includes date, patient age, operation type, indication for surgery, surgeon, anaesthetist and anaesthetic type. For caesarean sections additional maternal and foetal data are recorded including birth weight, foetal gender and mortality.

All caesarean sections from 1st October 2008 to 30th September 2009 recorded in these logbooks have been anonymously summarised. Non operative

deliveries are recorded in the labour ward logbook. The monthly birth rate for the same period, incorporating foetal death rate and maternal death rate has been summarised from this source material.

Results

Number of caesareans by month

In the year studied 430 caesareans were performed at JTH. This gives a mean of **1.2 CS per day**. Operations were performed throughout the week and by a variety of grades of surgeon. There was a fairly even spread of operations performed throughout the year – see Figure 1.

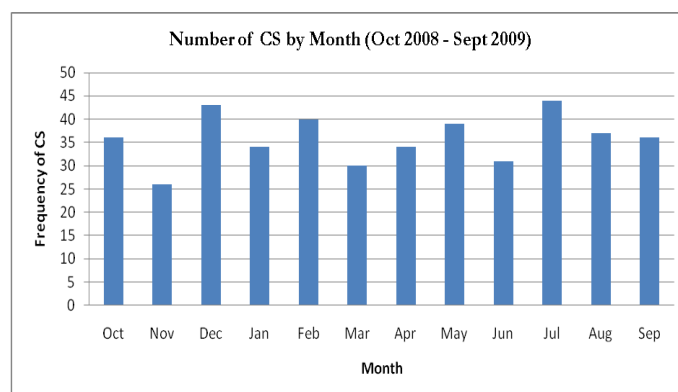


Figure 1.

Caesarean neonatal mortality

Table 1 shows the number of foetal deaths at delivery by CS by month giving an overall **neonatal mortality rate at CS of 7.0% of all CS deliveries**.

Table 1. Number of neonatal deaths recorded at delivery by CS. Oct 2008 – Sep 2009

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Neonatal mortality	1	2	5	5	1	5	0	2	1	3	3	2	30

Caesarean maternal mortality

Calculating the number of maternal deaths directly related to CS is difficult. The operating theatre logbooks did not record *any* maternal deaths directly

but this is known to be inaccurate. The original patient records for maternal deaths were not kept and we cannot be certain how many mothers died

during or after CS. There are some data recorded by midwifery staff on labour ward, but it is unclear whether [these are](#) comprehensive for JTH. From these data, five deaths of mothers who had CS are recorded during the research period giving a CS maternal mortality of at least **1.2%**. Anecdotally at least one of these was a death-on-table of a mother having an elective CS under general anaesthetic due to anaesthetic complications (aspiration). There is not a comprehensive approach to recording hospital-wide maternal mortality but using records from the labour ward logbook and senior midwifery staff we can assume that the range of maternal mortality from *non operative* deliveries is between **0.26 – 0.59%**.

Non operative deliveries

3402 babies were delivered in the labour ward during the year. There were 158 recorded foetal deaths and 9 maternal deaths. Of these vaginal deliveries, discrepancies in the various recording methods employed demonstrate a **maternal mortality**

ranging between 0.26% - 0.59% and neonatal mortality of 4.6%.

Combining vaginal and CS deliveries, total deliveries were 3832 and total neonatal deaths recorded were 188. Thus combined (CS and vaginal delivery) **neonatal mortality was 4.9%**. It's also noted that there may have been more postoperative neonatal and maternal deaths than recorded in the logbooks at the time of surgery, but the reporting systems in JTH at present are insufficient to quantify these. The above mortality rates should therefore be considered a minimum.

Table 2 summarises the number of vaginal and CS deliveries by month. Also included is the proportion of total births that are delivered by CS. World Health Organisation targets¹ suggest a range of between 5% and 15% of live births should be delivered by CS.

Table 2. Number of vaginal and CS deliveries by month Oct 2008 – Sep 2009

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Vaginal deliveries	243	338	275	271	246	281	282	312	269	260	315	310	3402
CS	36	26	43	34	40	30	34	39	31	44	37	36	430
Total Births	279	364	318	305	286	311	316	351	300	304	352	346	3832
% by CS	12.9	7.1	13.5	11.1	14.0	9.6	10.8	11.1	10.3	14.5	10.5	10.4	11.2%

Indication for surgery

The indication for surgery was recorded for almost every patient and the overwhelming majority (77%) of CS were performed due to obstructed labour. Labour pain was the second most common cause, followed by previous CS and placenta praevia – see

Figure 2. Eighteen separate indications for operation were found in the logbooks, with some of these including premature rupture of membranes (PROM), cord prolapse, antepartum haemorrhage and placental abruption occurring only once. These have been recorded in the 'Other' section and account for 6% of operations. Indications were recorded by non medically-qualified anaesthetic practitioners rather than obstetricians.

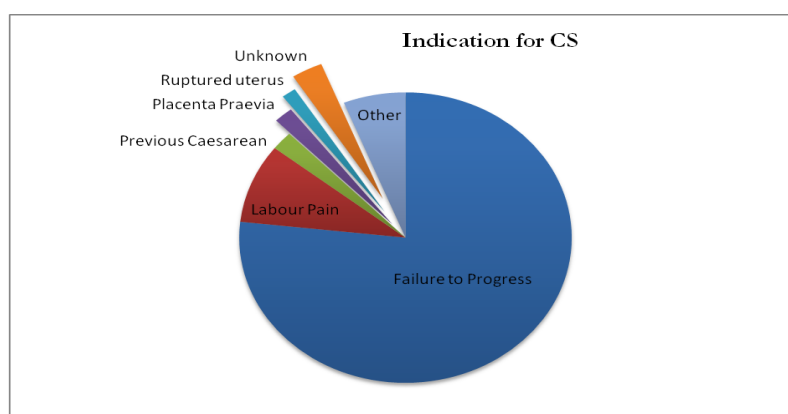


Figure 2.

The section marked 'Other' has been expanded in Table 3 to fully account for all the surgical indications recorded.

Table 3. Further indications for CS Oct 2008 – Sep 2009.

Indication for CS	Frequency	Percentage
Failure to Progress	330	76.7
Labour Pain	38	8.8
Previous CS	9	2.1
Placenta Praevia	8	1.9
Ruptured Uterus	6	1.4
Breech Presentation	6	1.4
Severe Pre-eclampsia	4	0.9
Eclampsia	3	0.7
Large Foetus	2	0.5
Antepartum Haemorrhage	2	0.5
Placental Abruption	2	0.5
Twins	1	0.2
Foetal death	1	0.2
Maternal age	1	0.2
Premature Rupture of Membranes	1	0.2
Oligohydramnios	1	0.2
Transverse Presentation	1	0.2
Cord Prolapse	1	0.2
Unknown	13	3.0
Total	430	100

Operating surgeon

In most cases, the operating surgeon's name was recorded. To preserve anonymity, these surgeons have been grouped into Consultant, Medical Officer (UK Senior House Officer equivalent) or House Officer depending on their grade – see Figure 3. In two cases, no name of the surgeon was recorded.

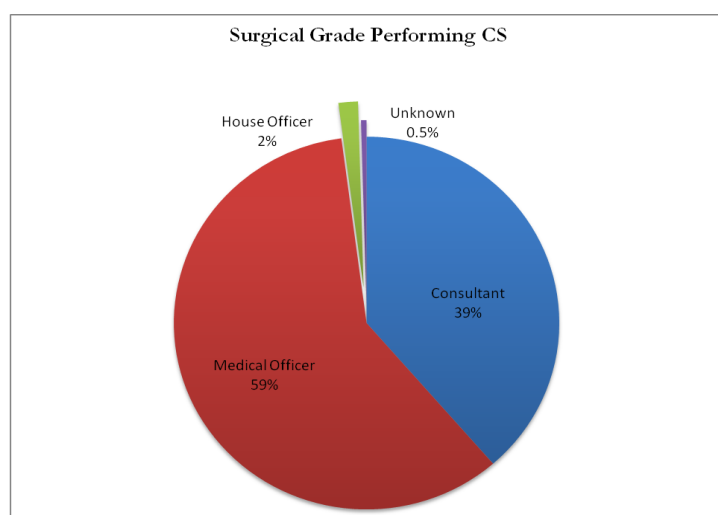


Figure 3.

Emergency and elective CS

CS were labelled in the logbooks as elective or the specific indication for emergency CS – Table 4 shows the numbers and percentages of each. Frequently, when a delivery was recorded as 'Elective' no further indication was specified.

Table 4. Emergency and elective CS from Oct 08 – Sept 09

	Emergency	Elective	Unknown	Total
Frequency	396	29	5	430
Percentage	92.1%	6.7%	1.2%	100%

Anaesthetic technique

Anaesthetics are performed exclusively by anaesthetic technicians. There are no medically qualified anaesthetists in JTH. Table 5 shows that the most frequent form of anaesthetic used was ketamine. Smaller numbers of spinal and general anaesthetics were used. Depending on the particular anaesthetist recording the technique in the theatre log-book, the term 'general anaesthetic' (GA) may at times refer to anaesthesia under ketamine or thiopental. (There are no records archived in the hospital of the specific drugs used.)

Table 5. Recorded anaesthetic techniques for elective and emergency CS Oct 08 – Sept 09.

	Spinal	Ketamine	GA	Unknown	Total
Elective	11	9	9	0	29
Emergency	81	248	65	2	396
Unknown	1	4	0	0	5
Total	93	261	74	2	430

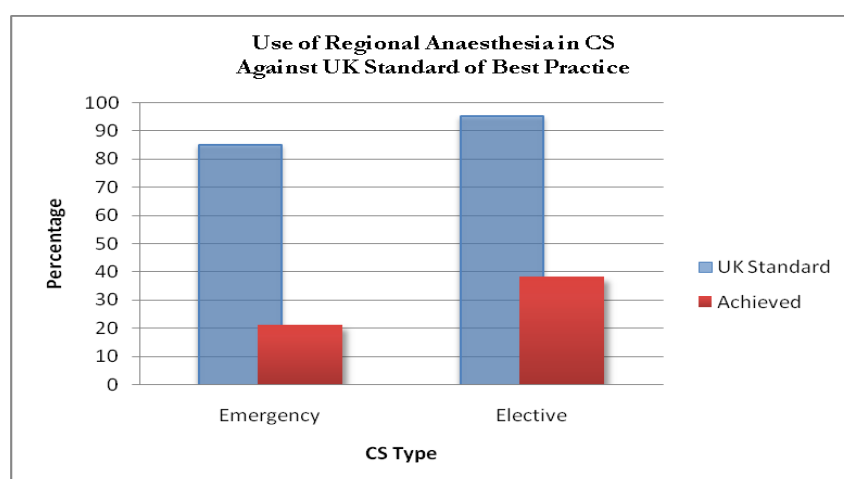
Tables 6 and 7 summarise the anaesthetic techniques used for elective and emergency CS. Figure 4 compares these rates with the proposed standards from the Royal College of Anaesthetists (UK)²

Table 6. Elective CS: Regional and General anaesthetic technique

	RA	GA	Unknown	Total
Frequency	11	18	0	396
Percentage	37.9%	62.1%	0.0%	100.0%

Table 7. Emergency CS: Regional and General anaesthetic technique

	RA	GA	Unknown	Total
Frequency	81	313	2	396
Percentage	20.5%	79.0%	0.5%	100.0%

**Figure 4.****Conclusions****Anaesthetic risk**

In the period studied, the majority of caesarean sections were performed using a general anaesthetic

or ketamine. We compared the data in this study to a standard of best practice from a Royal College of Anaesthetists guideline (2006)² which clearly highlights the deficit between published guidance of best practice and anaesthetic techniques practised at

JTH. There is a large body of evidence showing the risks of GA in caesarean section. The UK National Institute for Clinical Excellence (NICE)³ guidelines suggest that women who are having CS should be offered regional anaesthesia because it is safer and results in less maternal and neonatal mortality than general anaesthesia². However it should be noted that these guidelines are specific to the UK hospital context, with a service lead by medically qualified anaesthetists. Nonetheless there is likely to be some degree of applicability to Southern Sudan.

CS as a proportion of all deliveries

The WHO guidelines³ suggest an optimal proportion of 5-15% of all deliveries should be by caesarean section. During the year studied the monthly and overall proportion was consistently within this suggested limit.

Limitations of study

There are several useful research questions that cannot be answered with the data so far collected. Some of the logbook data is incomplete and these missing data have a direct effect on the reliability and usefulness of the analysis above. Patient notes are not available for review – most if not all notes (including records of drugs prescribed and given) are

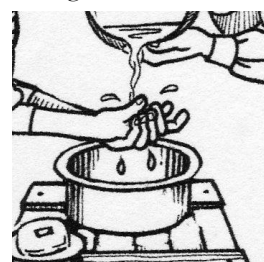
taken home by the patient at discharge. Thus intra-operative and postoperative data are incomplete. Specifics of patient care such as the use of prophylactic antibiotics or other peri-operative drugs are not recorded as a matter of course. Time of day and duration of surgery are not recorded, so it is impossible to calculate what proportion of the emergency work is being conducted out-of-hours and what implications this has on required emergency staffing levels.

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What do you know about handwashing?

1. Handwashing at critical times – including after using the toilet and before eating or preparing food – can reduce **diarrhoea** rates by almost 44 percent among children under 5.
2. More than 5,000 children every day – 1.7 million children every year – under the age of 5 die from diarrheal diseases. Diarrhoea is the **second most common cause of death in children**, accounting for 18 percent of all under-5 deaths.
3. Handwashing with soap is one of the **most cost-effective interventions** to prevent deaths and disease resulting from diarrhoea.
4. Handwashing with soap can reduce **acute respiratory infections** by around 23 percent. Pneumonia kills an estimated 1.8 million children per year and is the **number one cause of mortality** among children under five years old.
5. A recent study shows that when birth attendants and mothers washed their hands with soap, it significantly **increased newborn survival** rates by up to 44 percent.
6. Observed rates of handwashing with soap at critical moments – i.e. before handling food and after using the toilet – are very low, ranging from 0 to 34 percent.
7. Hands should be scrubbed with soap for at least 20 seconds. The key is to make handwashing with soap an automatic behaviour in homes, schools, and communities.



Watch the USAID's handwashing video at http://www.globalhandwashingday.org/GHD_Video.asp

Compiled from http://www.usaid.gov/our_work/global_health/eh/news/ghwd09.html

Non-severe pneumonia in childhood: guidelines for management in first-level health facilities

David Tibbutt DM, FRCP david@tibbutt.co.uk (based on the review 'Recommendations for the treatment of non-severe pneumonia' Lancet Infections vol 9 no 3. pp185¹)

Among the under 5-year-olds worldwide there are about 156,000,000 cases of pneumonia each year. This causes about 20% of all deaths in this age group. Effective implementation of the WHO Integrated Management of Childhood Illness (IMCI) reduces this morbidity and mortality. The recommendations for treating pneumonia for first-level health facilities were made over ten years ago although there was an update in 2005

In last 10 years there have been advances in:

- our knowledge of the epidemiology of pneumonia and resistance to antimicrobials
- the development of a greater range of antimicrobials.

Hence there is a need for a review of the guidelines for management. A team of experts in this subject has undertaken an in-depth review of published medical research and their conclusions are summarised below under the following headings:

1. What is the most appropriate first-line antimicrobial?
2. How to diagnose treatment failure.
3. Why treatment fails and what to do.

1. What is the most appropriate first-line antimicrobial?

Give:

- **Amoxicillin** 50mg/kg per day in two divided oral doses for **three days but**
- **If there is a high prevalence of HIV** in the area then give amoxicillin 50mg/kg in two divided doses for **five days**. This longer course of treatment is advised because of the lack of evidence for the effectiveness of the shorter course and the fact that the risk of severe pneumonia is greater in the HIV infected group.
- Co-trimoxazole^a may still be used (8mg trimethoprim /kg per day in two divided oral doses) if the resistance to this drug is known to be low.

Guidelines for treatment are useful but only after the clinical situation has been properly assessed and a judgement made about the severity of pneumonia. The features of **non-severe pneumonia** in childhood are based upon:

- Cough or

- Breathing difficulty.
- Tachypnoea: breathing rate of over 40/minute in a child aged 12 – 59 months and over 50/minute in a child 2 – 11 months.

Referral to hospital is needed for severe or very severe pneumonia, which is indicated by:

- Lower chest undrapping or
- Cyanosis
- Stridor when calm
- Inability to feed
- Convulsions
- Persistent vomiting
- Lethargy
- Unconsciousness.

Children under age two months have a high mortality from pneumonia and so all in this age group must be placed in the severe category.

The causative organisms for severe pneumonia vary in their proportions between and within countries. Studies in resource-poor countries are sparse. Nevertheless it remains important to target the most likely organisms that may lead to severe pneumonia and these are:

- *Streptococcus pneumoniae* in probably 17% - 37% of cases
- *Haemophilus influenzae* in probably up to 31% of cases.

However in perhaps 25% of cases of pneumonias acquired in the community are viral based. But this does not mean that a bacterial infection does not co-exist.

2. How to diagnose treatment failure

The detection of treatment failure is needed as this may indicate a need to change antimicrobial therapy and/or to refer the patient to hospital. If the clinical features listed above under '**Referral to hospital** is needed' are noted at 72 hours (48 hours in an area of high HIV incidence) then treatment failure is likely.

3. Why treatment fails and what to do

A clinical assessment will often give useful clues to a likely cause of treatment failure. The following list of many of the causes should be considered:

- Causative bacterium is not sensitive to the antimicrobial prescribed
- Inability or unwillingness to take the prescribed drug
- Drug vomited and not replaced
- Smaller dose than a child needed

^a Co-trimoxazole contains trimethoprim and sulphamethoxazole in the ratio of 1 part to 5 parts. It should generally be avoided in infants under age 6 weeks.

- Alternative diagnosis or coexisting conditions such as:
- Anaemia
- HIV infection – see below
- Malaria - see below
- Bronchial asthma
- Foreign body
- Heart disease
- Malnutrition
- Empyema
- Abscess
- Viral infection
- Tuberculosis
- Tuberculosis
- *Staphylococcus aureus* infection or mycoplasma pneumoniae
- H1N1

There are many rare causes (e.g. fungal infections) that have not been included.

Most cases of treatment failure should be referred to hospital, if possible. When this is done it is essential to send with the patient a short note about the clinical status at the time of referral and the treatment already given.

Where HIV prevalence is high

Where HIV infection rates exceed 5% the risk of pneumonia is increased and mortality is high. All children with pneumonia in these areas should be assessed for HIV infection and appropriately tested. There are reports of 85% of pneumonia deaths occurring in HIV-positive children. The prophylactic use of co-trimoxazole for these children reduces the pneumonia-related death rate. If a child is already taking prophylactic co-trimoxazole and has non-severe pneumonia amoxicillin is still indicated.

Where malaria prevalence is high

In children the clinical distinction between malaria and pneumonia can be difficult. Also a child with pneumonia may coincidentally also have malaria parasites on a blood slide. So if malaria cannot be excluded and pneumonia is still probable then treatment for malaria and pneumonia should be given together. A child who has malaria may develop severe anaemia that in turn leads to a tachypnoea. All patients should be checked for anaemia preferably by the laboratory but if this is not possible then look for pallor of the

- Palms of the hands
- Nail beds
- Conjunctivae and
- Mucous membranes.

If severe anaemia is present then urgent hospital referral is essential.

When transfer to hospital is impossible

Although clinically indicated it may not be possible to transfer a patient to a place where a higher level of clinical care is available. Under these circumstances the child should be given antimicrobial treatment that covers a wider range of possible causative organisms. The drugs to consider are injectable:

- chloramphenicol
- ceftriaxone
- penicillin and gentamicin.

Key learning points

- Amoxicillin is the first choice in the treatment of non-severe pneumonia in children less than 5 years and not allergic to penicillin. Consider Erythromycin for children allergic to penicillin and those older than 5 years.
- Be aware of the clinical features of severe pneumonia and treatment failure.
- Consider the list of causes of treatment failure.
- Never forget malaria and
- Anaemia.
- Pay special attention to the possibility of HIV infection in a child with recurrent non-severe pneumonia
- Tachypnoea alone is an important clinical sign to assess the severity of pneumonia.

Reference

1. Grant GB, Campbell H, Dowell SF, Graham SM, Klugman KP, Mulholland EK, Steinhoff M, Weber MW and Qazi S. Recommendations for treatment of childhood non-severe pneumonia. *Lancet Infectious Diseases*, Vol 9 issue 3, pp 185 - 196, March 2009
[http://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(09\)70044-1/fulltext](http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(09)70044-1/fulltext)

Thanks to Dr Louis Danga for reviewing this article.

Quiz – see answers on page 17

1. World wide how many children die:
In their first month?
Before their first birthday?
Before their fifth birthday?
2. What percent of children dying before their fifth birthday die of:
HIV/AIDS?
Measles?
Malaria?
Diarrhoea?
Pneumonia?
3. In what percent of under-five year old deaths is malnutrition the underlying cause of death?

Evidence-based medicine - searching the medical literature. Part 1.

Anne Lancey, Education Centre, St Mary's Hospital, Isle of Wight, UK. Anne.Lancey@iow.nhs.uk

All health professions should be practising 'evidence-based care'. This is defined as the **"integration of the best research evidence with our clinical expertise, and our patient's unique values and circumstances"**¹.

Evidence comes in two types:

1. Primary sources (individual research studies, case studies etc) and
2. Secondary sources (reviews/analysis of studies already done or condensed summaries of all the latest evidence).

Textbooks provide references to both these types of evidence, but are normally a year or more out of date. The latest evidence is best found by searching journals and internet sites, and this article concentrates on the retrieval of primary sources and reviews via PubMed. Part 2 will cover searching for secondary evidence, particularly in the Cochrane Library.

PubMed is the freely available version of Medline. Medline is a huge medical database compiled by the National Library of Medicine in the USA. There are other databases covering medicine/nursing/allied health/psychological literature, but these are only available on payment of a subscription. Most of these will overlap with the content of PubMed.

PubMed and these other databases retrieve only the citation (title, authors, journal etc) of the article and possibly an abstract indicating the content. Usually they will not give you the full text of the research study or review. If the full text of the article *is* freely available this will be indicated and it can be downloaded. If you have a password for access via HINARI^{a2} use that to log in. Then you can retrieve articles from the 6000 journals that will be available to you. You cannot retrieve the full text from journals that do not allow free access or HINARI access.

How to search the literature on the internet

Before you start your search take a moment to think what exactly it is that you wish to find out, then plan your 'search strategy':

1. Think of your question.
2. Consider the different parts (components) of your question. Sometimes it is helpful to consider these under the headings of **PICO** - what/who is the: **P**atient, **I**ntervention, **C**omparison, **O**utcome required.
3. Think of all the terms/keywords that you need to enter.

Below are two examples and an explanation of the terms used.

Example 1.

1. Question: "How should I treat malaria in children showing drug resistance?"			
i.e. treatment for drug resistant malaria in children			
2. Component terms (keywords/phrases)			
children	drug resistant	malaria	treatment
3. Alternative terms (synonyms)			
child	drug-resistant resistance multidrug specific drug names	antimalarial anti-malarial	therapy
4. MeSH			
0-18 years	Drug-resistant	Malaria	Therapy Therapeutics

^a The Access to Research Initiative (HINARI) provides free or very low cost online access to the major journals in biomedical and related social sciences to local, not-for-profit institutions in developing countries (including Southern Sudan).

Example 2.

1. Question: "Is conservative or surgical management best for knee injury?" i.e. conservative versus surgical treatment for knee injury			
2. Component terms (keywords/phrases) using PICO			
<i>Patient</i>	<i>Intervention</i>	<i>Comparison</i>	<i>Outcome</i>
knee injury	surgery	conservative management	most effective long term healing
3. Alternative terms (synonyms)			
	surgical procedure surgical treatment	conservative treatment	outcome
4. MeSH			
Knee injuries	Surgical procedures, operative	Therapy Therapeutics	Outcome assessment (Health care)

Explanation of terms used

- *Keywords* - normally when using the internet for searching we just use keywords, and the computer only retrieves an exact match for that word (or sometimes a shorter version of it - e.g. missing off the plural 's').
- *Truncation* - if there are several possible endings to a word then type in the stem of the word followed by an asterisk. For example. 'resistan*' picks up 'resistant' and 'resistance'; 'resist*' would also pick up 'resisting' etc.
- *Synonyms* - if there are a variety of possible words for the same thing then enter each one to be sure to find all the articles/items. For example 'heart attack', 'myocardial infarction', 'MI'.
- *Thesaurus* – some databases help you to search for synonyms by giving a list of similar terms. This is called a thesaurus. In Medline the terms on this list are known as **Medical Subject Headings**, or **MeSH**. So, for example, if you enter 'heart attack' in the search box, and MeSH is switched on, you will retrieve all the articles including the term 'myocardial infarction' as well as those with 'heart attack' or 'MI'. PubMed does this for you automatically.
- *Boolean operators* – these are the words 'AND', 'OR' and 'NOT', which you can use in all internet searching to link words or groups of words together. For example 'malaria AND drug resist* AND (child OR children) NOT adult'. PubMed does this for you automatically.

How to search PubMed

Access PubMed via the HINARI website², or direct at <http://www.ncbi.nlm.nih.gov/pubmed/>

First note that there is a 'PubMed Quick Start' link under the heading **Using PubMed** on the lefthand side of the screen. This gives various brief guides on how to search PubMed, and it is worth looking at them.

PubMed is designed to be simple to use, so you should not need much training to understand the basics. More advanced searching is possible if required, but PubMed automatically searches keywords and MeSH headings together, so saving time.

Basic searching

- Enter your string of keywords/phrases in the main search box (at the top of the screen) in any order e.g. "treatment drug resistant malaria children", and click **Search**

- 20 of the total number of results will be shown on the screen with basic details of the article only.
- The most recent articles are shown first and generally appear in reverse date order (getting older).
- Scroll down the screen and on the righthand side you will see a **Search Details** box, showing you which terms/synonyms and MeSH were used - you can check here how PubMed has used the Boolean operators.
- *Note:* as you continue searching you can return to previous searches by clicking the links in the **Recent Activity** box on the righthand side of the screen.

Results

- To see the Abstracts either change the **Display Settings** (at the top of the results list) to **Abstracts**, or look at them

individually by double clicking the relevant article title.

- The Abstract display will also give links to the full text where this is free (and where available via HINARI if you are logged in to that service).
- Click in the box beside any of the citations that you might want to save, print or email later.
- Use the **Next** button to move through the pages of results.
- To display or email your chosen citations click **Send to** (top right of the list of results) and choose your preferred method for saving - to a **File** (to save or print) or **E-mail**. *Note:* you can also save the citations to a **Clipboard** if you are going to continue your search - your Clipboard shows at the top of the righthand panel of the screen.
- If you email the citation it will include any link to the full text.
- *Note:* titles enclosed in [square brackets] indicate that the article is not written in English (although the Abstract may be).

Reducing the number of results

If you have too many results you can reduce the number by using 'Filters' or 'Limits'.

1. On the righthand side of the screen you can click one of the following links under the **Filter your results** heading:

- 'limit to Reviews' or
- 'only those available in Full text'

2. To see more options for 'limits' click the **Advanced Search** option above the main search box and scroll down the new screen to see ways to limit your results. For example:

- add another term/concept, or author, or journal title, etc.
- choose only those with full text available.
- limit by dates; age groups; language; etc.
- limit by type of publication, e.g. clinical trial; practice guideline; review, etc.

Choose those you wish, and click **Search** at the bottom.

Note: Any of these options you choose will automatically attach themselves to the last search you did *and to future lines as you continue searching*. To attach your options to a different search line on your list (shown in the **Search History** box at the top of the Advanced search page):

- clear the main search box at the very top of the screen and
- type the number of the search line in prefixed by # - e.g. #3.

To remove the limits look under **Limits Activated** at the top of the righthand column on the main screen to see them listed and click the link **change/remove** (or click back in to **Advanced Search**).

Pre-set Filters

Scroll further down to the **More Resources** section on the **Advanced search** page to find pre-set filters (search strategies) for example for aetiology, diagnosis, therapy, prognosis, etc. These will focus your search by adding in pre-selected terms. For example:

- Under **More Resources** click **Clinical Queries**.
- Under **Search by Clinical Study Category** choose the appropriate **Category** and **Scope**.
- In the Search box just above these options either retype your search phrase, or put in the line number prefixed by #. e.g. #1
- The **Search Details** and **Recent Activity** boxes on the righthand side of the results screen will show you what you have searched.

Saving your searches

You can save your search results in order to keep a record or continue another day. You will need to have registered (free) with **My NCBI** to do this (see top righthand corner of the screen).

- Make sure you are logged in to **My NCBI**.
- Click the **Save Search** link above the main search box (next to the **Advanced Search** link).
- Name your search and complete any other boxes you wish.
- Next time you come to search, go to **My NCBI**, sign in, find the search you want under **Saved Searches**, double click the name of the search you want – it should then open up!

References

1. Straus S. E., Richardson, W. S., Glasziou, P., Haynes, R. B (2005) 3rd ed. Evidence-based medicine: how to practice and teach EBM. *Edinburgh: Churchill Livingstone*.
2. See <http://www.who.int/hinari/about/en> See footnote on first page of this article.

What do you know about gonorrhoea?

What causes it?

Gonorrhoea is caused by the sexually transmitted bacterium *Neisseria gonorrhoeae*. The incubation period ranges from two to 30 days. The risk of infection differs between the sexes:

- Males: 20% risk after sexual contact with an infected female.
- Females: 60-80% risk after sexual contact with an infected male.

During childbirth an infected woman may transmit gonorrhoea to her newborn and cause ophthalmia neonatorum.

What are the signs and symptoms?

In **males** they are (although some have no symptoms):

- Yellowish penile discharge which may be thick and in large quantities, with painful, frequent urination.
- Inflamed external urethral meatus (indicating the urethritis). If the infection spreads to the prostate (prostatitis), seminal vesicles or epididymis (epididymitis) then pain and fever result.
- Infected testicles giving rise to swelling and localised pain.

In **females** they are (but only up to 50% have symptoms):

- Vaginal discharge and vulval pruritus.
- Lower abdominal pain and right upper quadrant pain resulting from gonococcal perihepatitis (Fitzhugh-Curtis syndrome)^a.
- Vomiting.
- Fever.
- Painful urination (urethritis).
- Pain during intercourse and sometimes post-coital bleeding.
- Disturbance of the menstrual cycle including bleeding between periods.
- Pelvic inflammatory disease resulting from the infection spreading to the uterus, fallopian tubes, and ovaries. This may lead to infertility.
- The cervix may become severely inflamed (cervicitis) with pus.

^a Fitzhugh-Curtis syndrome is rare, occurs only in women and may result from chlamydial infection. As well as perihepatitis there may be: fever; infection of the joints of fingers, toes, wrists and ankles; septic arthritis, septic abortion; chorioamnionitis during pregnancy and blindness from conjunctivitis affecting neonates or adults.

Untreated gonorrhoea may lead to septic arthritis and bacterial endocarditis.

How is it treated?

You can use a wide range of antibiotics to treat gonorrhoea. These include:

- Amoxicillin 2 g with probenecid 1 g orally.
- Ampicillin 2 to 3 g with probenecid 1 g orally.
- Azithromycin 2 g orally.
- Cefotaxime 500 mg by intramuscular injection.
- Ceftriaxone 125 to 250 mg by intramuscular injection.
- Ciprofloxacin 500 mg orally: **do not use** the fluoroquinolone (and others such as ofloxacin, levofloxacin) in pregnancy.

Tetracycline is not listed because resistance of *Neisseria gonorrhoeae* to this antimicrobial is so great that it is not effective in most parts of the world.

Contact tracing is important so check all sexual partners to prevent spread of the disease and reinfection. At the same time offer screening for other sexually transmitted infections. Where chlamydia is common, give doxycycline or azithromycin so you treat both diseases.

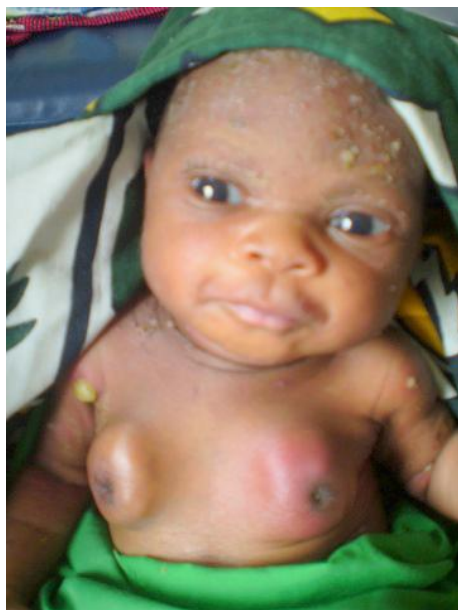
If a woman giving birth has gonorrhoea give erythromycin eye ointment to the baby to prevent blindness.

Two warnings about possible treatment failures

1. Penicillin will not effectively treat rectal gonorrhea. The rectum contains other bacteria that produce β -lactamases that destroy penicillin.
2. Gonorrhea of the throat (in those who engage in oral sex) may be difficult to clear with all treatments. Patients should have a throat swab 72 hours after treatment. Retreatment is needed if the throat swab is still positive. If bacterial culture is not possible then clinical follow-up is necessary.

We thank David Tibbutt for allowing us to base this item on his article in The Uganda Continuing Medical Education Newsletter July - October 2009 Issue 57.

A clinical quiz



This picture shows a twelve-day old girl who was born by caesarean section to a healthy mother at Kajo Keji Hospital. The mother was primagravida. She had no history of recreational drug use and was not on any regular prescription drugs including corticosteroids.

The indication for her delivery by emergency caesarean section was failure of progress and foetal distress.

The baby was delivered in healthy condition, but on the following day she had developed what appeared to be 'itching' as noted from her moving her arms over her breasts frequently.

Mother was normotensive, had no vaginal discharge and her HIV status was negative.

Questions:

1. How many abnormalities can you identify on the above picture?
2. What investigations would you carry out?
3. What treatment would you start whilst waiting for results of tests?

Please send your answers to Dr Kandyang Modi Dumo Jansuk (kandmodi@yahoo.com) or Dr Eluzai Hakim (eluzai_hakim@yahoo.co.uk). We will discuss them in the next issue of this journal.

Contributed by Dr Kandyang Modi Dumo Jansuk, Medical Officer in Obstetrics and Gynaecology, Juba Teaching Hospital.

Is there a link between nutrition in early life and adult chronic diseases?

A recent comment in the Lancet has highlighted the links between nutrition in early life and later chronic disease¹. It reported studies showing that:

- Most growth faltering in children in low-income countries occurs between conception and 2 years of age. After that the average rate of growth of most of these children is similar to those in high-income countries.
- Good nutrition in utero and up to 2 years is essential for building up lean body mass.
- Foetal growth is largely linked to maternal nutrition, and growth after birth is related to breastfeeding and complementary feeding practices.
- **Undernutrition in the period from conception to 2 years of age is associated with increased risk of:**
 - short-term mortality and morbidity.
 - **cardiovascular and metabolic diseases in later life - especially if there is rapid weight gain in childhood and/or adolescence².**

The implications of these data are:

- The short and long-term health of Southern Sudanese children is strongly influenced by how they are nourished during the foetal period and first 2 years of life.
- So community-based interventions (including counselling to all family members) should explain why and how to feed:
 - women of reproductive age - so they are well nourished *when* they become pregnant, and *during* pregnancy and lactation.
 - babies aged 0-6 months - by promoting and explaining exclusive breastfeeding.
 - infants aged 6 months to at least 2 years - by promoting continued breastfeeding with good complementary feeding.

References

1. Victora CG. Nutrition in early life: a global priority. *Lancet* vol374 p1123 October 3, 2009 (www.thelancet.com).
2. Baird J et al. Being big or growing fast: systematic review of size and growth in infancy and later obesity. *BMJ* vol331 p929 2005.

Action against Childhood Pneumonia^{1, 2}

More than two million children under age 5 years die each year from pneumonia. This is more than the combined mortality from HIV, malaria and measles: an astonishing and not widely realised fact! Appropriate vaccination could prevent half of these deaths. Inexpensive antibiotics (about \$0.27 for an average course of treatment) are available for treating most cases yet only one in five children with pneumonia receive antibiotics. We are able to transplant hearts and read the genetic code yet those in resource-poor circumstances are still denied the basic care and medicines for this "forgotten killer".

The *Global Coalition against Pneumonia*³ is a welcome initiative. Celebration of its first year will raise awareness about this disease. WHO and UNICEF have (on 2nd. November 2009, *World Pneumonia Day*) launched the *Global Action (6 year) Plan for Prevention and Control of Pneumonia* (GAPP)⁴ which contains three actions:

1. Provide an environment where there is a low risk of pneumonia,
2. Prevent children from developing pneumonia,
3. Treat those who become ill.

The key recommended actions, based upon research over the last 20 years, include:

1. Exclusive breast feeding up to age six months,
2. Vaccination against pneumococcal and *Haemophilus influenzae* type b,
3. Appropriate management of pneumonia especially in community facilities.

The challenge to introduce these interventions has already been taken up by a number of countries. Rwanda was the first to initiate a pneumococcal immunisation programme and infant deaths are falling. By 2015 the aim is to roll out a similar initiative in 42 other low-income countries.

Donors and our developing country partners must work together to ensure that the health of children is a priority and put in place a package of interventions that can greatly reduce the death rate from pneumonia.

References

1. Frist B & Sezibera R. Time for renewed global action against childhood pneumonia *Lancet*, vol 374, issue 9700, Pages 1485 - 1486, 31 October 2009
2. USAID Bureau for Global Health, World Pneumonia Day 2009 http://www.usaid.gov/our_work/global_health/home/News/pneumonia_day09.html
3. Global Coalition against Pneumonia is an international network of about 100 organisations/members dedicated to fighting childhood pneumonia. See <http://worldpneumoniaday.org>
4. WHO, UNICEF, the Hib Initiative, and PneumoADIP 2008 Global Action Plan for the Prevention and Control of Pneumonia *Report of an informal consultation, La Mainaz, Gex, France, 5-7 March 2007* http://whqlibdoc.who.int/publications/2008/9789241596336_eng.pdf

See page 10 for guidelines on the management of non-severe pneumonia.

DO YOU KNOW how many people in the world are living with diabetes?

Answer: 285 million

And:

- A further **344 million** are at high risk of developing the disease, and by 2030 more than **435 million** will live with diabetes.
- Every 10 seconds a person dies from diabetes-related causes.
- Every 10 seconds two people develop diabetes.
- Every 30 seconds a limb is lost to diabetes.
- Each year 7 million people develop diabetes.
- Each year 4 million deaths are attributable to diabetes.
- Diabetes is the 4th leading cause of global death by disease.

Answers to quiz on page 11

1. Number of children who die:
 - In their first month = 3.8 million
 - Before their first birthday = 6.3 million
 - Before their fifth birthday = 9 million
2. Percent of children aged under 5 years dying of:
 - HIV/AIDS = 3%
 - Measles = 2%
 - Malaria = 8%
 - Diarrhoea = 18%
 - Pneumonia = 19% - see page 17.
3. Percent of under-five year old deaths in which the underlying cause is malnutrition is about 35%.

Data from

www.childhealthnow.org/docs/pdf/Child_Health_Now-Report.pdf

Reports and news from Southern Sudan

WHO warns: Aid shortfall may leave millions sick and starving in Southern Sudan

A recent news item by John Zarocostas in the British Medical Journal¹ reported that the World Health Organization is warning that shortfalls in aid will strike a severe blow at efforts to deliver essential healthcare services to the 8 million people in Southern Sudan. WHO asked for \$27m in healthcare aid for Southern Sudan but so far has received only \$2.8m.

Dr Mohamed Abdur Rab, WHO's country representative in Sudan, is quoted as saying:

- "The region is highly burdened by infectious and chronic diseases and has one of the world's highest rates of maternal mortality (**2054 deaths per 100 000 live births**) and of infant mortality (**150 deaths per 1000 children aged 12 months or under**)".
- "There is a huge dearth of skilled manpower in health. At present about **75-80% of the health coverage in Southern Sudan is provided by non-governmental organisations**, and they cover just **25% of the population**".
- "There is only **one tertiary hospital**, in the capital, Juba, that provides some specialist treatment, as the other hospitals are not adequately equipped".
- "The region has **only 10 fully qualified and skilled nurses**".
- "Only **one in five children are fully vaccinated**".

1. BMJ 2009; 339:b4659

Data from: Weekly Epidemiology Bulletin Week 7-13 December 2009. Ministry of Health GoSS

Reports from 45 out of a total of 79 counties.

- Of the 9729 health events reported 8562 (88%) were due to **malaria**.
- Of the 27 reported deaths 22 (81%) were caused by **malaria**.
- Almost all the remaining health events and deaths were due to **acute watery or bloody diarrhoea**

Extracts from Journals

Please send us more material for future issues of the Journal.

Why hypertensive patients are not taking their medication in DRC

A small focus group study at Vanga Hospital, Bandundu Province, Democratic Republic of Congo found that hypertensive patients did not adhere to

their medication because of unpleasant side effects. They take medication only when they experience perceived symptoms, and they lack overall knowledge about their disease. Lack of support from family and difficulty obtaining medication also played a role in non-compliance to anti-hypertension medication.

See "Reasons for non-compliance among patients with hypertension at Vanga Hospital, Bandundu Province, Democratic Republic of Congo: A qualitative study" *African Journal of Primary Health Care & Family Medicine* 2009; 1(1): 68 (open access) <http://www.phcfm.org/index.php/phcfm/article/view/68>
Extracted from *procor Weekly Prevention Update* 7 October 2009 www.procor.org

'**Harmonising the Metabolic Syndrome**' is a Joint Interim Statement of the International Diabetes Federation (IDF) Task Force on Epidemiology and Prevention and several other institutions.

A cluster of risk factors for cardiovascular disease and type 2 diabetes mellitus, which occur together more often than by chance alone, have become known as the metabolic syndrome. The risk factors include raised blood pressure, dyslipidemia (raised triglycerides and lowered high-density lipoprotein cholesterol), raised fasting glucose, and central obesity. Various diagnostic criteria have been proposed by different organizations over the past decade. The present statement is the outcome of a meeting between several major organizations in an attempt to unify criteria.

It was agreed that there should not be an obligatory component, but that **waist measurement would continue to be a useful preliminary screening tool. Three abnormal findings out of five would qualify a person for the metabolic syndrome. A single set of cut-off points would be used for all components except waist circumference, for which further work is required.** In the interim, national or regional cut points for waist circumference can be used.

Download the full statement at www.world-heart-federation.org/publications.

Data from "Global Dialogue" procor@list.procor.org 23 October 2009

Global health risks: Mortality and burden of disease attributable to selected major risks is a new downloadable report from WHO. Text, charts, and data show the nature of 24 health risks and discuss the joint effects of risk factors. Among the many findings are:

- One quarter of the 60 million deaths estimated to occur annually are due to childhood underweight, unsafe sex, alcohol use, lack of safe water, sanitation and hygiene, and high blood pressure

- More than a third of the global child deaths can be attributed to a few nutritional risk factors such as childhood underweight, inadequate breastfeeding, and zinc deficiency.
- Unhealthy and unsafe environments cause one in four child deaths worldwide.
- 10 leading preventable risks decrease life expectancy by nearly seven years globally and by more than 10 years for Africa.

Download full report PDF (3.77 MB) at www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf or specific sections; a PowerPoint presentation of key figures and graphs; and statistics from the report at www.who.int/healthinfo/global_burden_disease/global_health_risks/en.
Extracted from procor website www.procor.org

For your resource centre

World Diabetes Day (14 November 2009) marked the start of a 5-year campaign on "**Diabetes education and prevention**". Some useful resources for educating the public and health professionals are:

- **International curriculum for diabetes health professional education:** Training modules for diabetes educators on pathophysiology and classification of diabetes, psychological issues and behavioral change, nutrition, physical activity, and self-management. Available in Arabic and English. Print and CD-ROM copies may be ordered from: <http://shop.idf.org/catalog>. International Diabetes Federation, 2008.
www.idf.org/home/index.cfm?unodeSC34AE1-EA02-48F8-B939-FA877DA007F4
- **Diabetic Medicine:** Journal of diabetes clinical research and practice. Free online access available to institutions in developing countries through HINARI. Diabetes UK.
www.wiley.com/bw/journal.asp?ref42-3071
- **Patient-focused pamphlets** on diabetes prevention and care including basic food guides and meal sheets (from New Zealand but could be adapted) see www.dptresources.org.nz/res1.html
- **Measure up - Are you at risk of diabetes? Two-minute online test** for patients to determine their risk of diabetes.
www.diabetes.org.uk/measure-up

Data from <http://www.procor.org/resources> For more resources visit <http://www.procor.org/resources> or use ProCor's Search by Topic feature (<http://www.procor.org/search>) and select risk factors (See above on page 17 for the numbers of people with diabetes.)

The '**Book for Midwives**' from the **Hesperian Foundation** is available in HTML format at http://www.hesperian.org/publications_download_midwives.php. All Hesperian books including the 2009 edition of 'Where There is No Doctor' are available in HTML format at http://www.hesperian.org/publications_download.php

'Child Health Now' is a new well-illustrated 49 page report from World Vision which calls for a renewed global effort to decrease child deaths in developing countries. It highlights the importance of community health education and the role of community health workers. See www.childhealthnow.org/docs/pdf/Child_Health_Now-Report.pdf

The Child Healthcare Problem Identification Programme (Child PIP) at

<http://www.childpip.org.za> is a mortality audit tool that uses the mortality review process to assess and improve the quality of care given to children in South Africa. The tool emerges out of a simple thought process:

- As health workers who care, we reflect on what we do.
- When we reflect on what we do, we end up asking a simple question: 'Is this the best I can do'?

The **Child PIP package** answers this question and consists of Mortality Review Training Resources, Paper Tools and a Software Data Management and Analysis Programme.

The audit of several thousand deaths provides information on cause of death, health context (especially HIV and nutritional status), and modifiable factors (instances of suboptimal care and missed opportunities throughout the health system). If you are keen to make a difference to the care given to sick children, consider implementing the Child Healthcare Problem Identification Programme (Child PIP) in your hospital.

To find out more go to www.childpip.org.za and see particularly the March 2008 publication "Every Death Counts: Saving the lives of mothers, babies and children in South Africa"

JAMA Patient Pages

Compilation of more than 500 one-page information sheets for patients on medical issues. CVD-related topics include cardiac stress testing, chest pain, diabetes, heart failure, hypertrophic cardiomyopathy, peripheral arterial disease, and more. All handouts are available as PDF files. Journal of the American Medical Association. http://jama.ama-assn.org/cgi/collection/patient_page

The Journal of Infection in Developing

Countries Vol 3, No 9: October 2009 is

downloadable at

<http://www.jidc.org/index.php/journal>. Among the many articles are:

- A step by step procedure towards the pandemic influenza preparedness
- Antimicrobial susceptibility of select respiratory tract pathogens in Dakar
- The aetiology of acute community acquired bacterial meningitis in children and adults in Maputo.

Palliative care toolkit and training manual.

Help the Hospices has helped to create a Toolkit that is designed to equip, empower and encourage health workers in resource-limited settings to integrate palliative care into their work and their communities.

The illustrated and easy-to-read toolkit 'Palliative care toolkit: Improving care from the roots up in resource-limited settings' provides a holistic and 'can do' approach to delivering care to those with life-limiting diseases. The training manual aims to

support education and training in hospice and palliative care in developing countries.

You can download the toolkit and training manual (chapter by chapter if you want) at <http://www.helpthehospices.org.uk/our-services/international/what-we-do-internationally/education-and-training/palliative-care-toolkit>.

The toolkit is available in print and CD if you work in hospice and palliative care in a resource-poor setting or are planning to travel to a resource-poor setting to deliver training. Email info@helpthehospices.org.uk

Please send articles and news for future issues of the Southern Sudan Medical Journal to Dr Eluzai Hakim Eluzai_hakim@yahoo.co.uk or Dr Wani Mena wanimena@gmail.com. Deadline for the May 2010 issue is March 15th.

Every effort has been made to ensure that the information and the drug names and doses quoted in this Journal are correct. However readers are advised to check information and doses before making prescriptions. Unless otherwise stated the doses quoted are for adults.

WHO charts for everyone caring for children in hospital

In this issue of the Journal on page 21 we are reproducing the first chart from '**Pocket Book of Hospital Care for Children - Guidelines for the Management of Common Illnesses with Limited Resources**' (WHO 2005). This is '**Chart 1. Stages in the management of the sick child admitted to hospital: summary of key elements**'.

We plan to publish more charts from this book in future issues. You can use these charts in different ways. For example, you can print them and display them in relevant wards or clinics (laminated if possible), use them as a 'memory aid' in your pocket or use them as handouts or visual aids when training staff. Please let us know if you find the charts useful and how you use them.

You can download the whole book from <http://www.ichrc.org/>.

We thank the WHO for permission to reproduce these charts, and Dr O'Hara in Lesotho who gave us the idea of making the charts more widely available.

CHART 1. Stages in the management of the sick child admitted to hospital: summary of key elements

