

**THE MAIN PROBLEMS SEEN IN THE NEONATAL
UNIT, IN KHARTOUM HOSPITAL, 1972**

**MOHAMMED IBRAHIM ALI OMER
MB, BS, DCH, MRCP.
DEPARTMENT OF PAEDIATRICS & CHILD HEALTH
FACULTY OF MEDICINE
UNIVERSITY OF KHARTOUM
SUDAN.**

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INTRODUCTION

The neonatal unit in Khartoum Hospital looks after all the newborns delivered in the maternity ward plus others delivered elsewhere and then referred. It is not yet possible to extend our services to the labour ward due to staff shortage.

The majority of babies are roomed in with their mothers and our policy is to leave the mother give the maximal care possible under the supervision of our staff. Only those babies who need special attention are admitted to the special care unit e.g. very small babies unable to suck, babies needing parenteral infusion, and those undergoing operations etc.

The special care unit is housed in an improvised room with glass partitions. This arrangement is far from adequate, and the need for a purpose – built mother and baby unit is urgent. There we hope, almost all the babies will be looked after by their mothers and the duty of the staff will be to guide, educate and help whenever possible.

At present incubators are not used as it was noticed that the number of incubators available was always inadequate resulting in doubling of babies in each incubator. Also the staff who have the expertise of handling the incubators was not available throughout the 24 hours. It was also noticed that the mortality was higher in the babies kept in the incubators compared to those who did not have that privilege. This was an impression and no controller trial was conducted. All these factors added to the cost of the incubators and the expense of their maintainance have prompted us to do without them. The room temperature is kept high by means of heaters. Moisture is increased by boiling water in kettles. Oxygen so far is given by mask, but it is hoped that soon we will have special cots covered by perspex to be heated by electric bulbs. Also we hope to have simple perspex head-box for giving high oxygen concentration.

With this background the following data of our experience in the first year are presented. This is a review of the more important problems seen in this unit in 1972. For the sake of brevity this is restricted to:—

- (a) The overall picture.
- (b) Low birth weight babies.
- (c) Hyperbilirubinaemia.
- (d) Causes of Death.

MATERIAL, OBSERVATIONS AND DISCUSSION

All records of babies admitted to the unit from 1st. January to 31st. December, 1972 were examined and only those found to have adequate information were analysed.

(a) *An Overall Picture*

Table I gives a summary of the total number analysed which amounted to 831 babies. The actual number of deliveries in this hospital is much higher – around 2000 annually but the majority of these are normal babies, normally delivered following a normal pregnancy. Due to pressure of beds they are discharged as soon as possible sometimes from the labour ward – only when there special problems or complications with the mother or baby are they admitted to the postnatal ward.

438 (52.7%) were males.

301 babies (36.2%) needed some special attention from the paediatric team. The problems ranged from simple conjunctivitis to severe hyperbilirubinaemia needing exchange transfusion to fatal bronchopneumonias or gastroenteritis.

149 babies were of low birth weight amounting to about half the babies requiring some attention and comprising 17.9% of all the babies included in this analysis.

(b) *Low-Birth weight*

Although the recommended international level of low birth weight is 2500 grams (5/1bs) (W.H.O. 1961) it was constantly noticed in our unit, and by Modawi (1963), that the babies below this level and above 5 lb behaved like term babies. In addition analysis of the data so far available depicted in Fig. 1 shows that the mortality in babies weighing less than 2 lbs (908 gm) approaches 100% and drops with increasing weight to reach 5.2% in the 5–5/1bs group. This is similar to the figure of 3.2% obtained from the babies weighing more than 5/1bs.

Unfortunately we have no data about the gestational age of these babies – had this been available it would have helped greatly in resolving the issue. Nevertheless from the above observation and data we feel quite justified to set our low birth weight level provisionally at 5 lbs pending more information which we hope will be able to get in the near future.

Even with this lower level it is seen that the incidence of low birth weight in this series is 17.9% which is high when compared with series from the West, Nelson et al (1969). The fact that this is a highly selected group may be partly responsible for this.

The decision to discharge a low-birth weight baby does not depend on the weight attained – it rather depends on the behaviour of the baby and the ability of the mother to cope with the baby's problems. The mother usually has free access to the baby in hospital where she looks after him most of the time. As soon as the baby is feeding well, gaining weight steadily, and the mother gained adequate confidence, they are discharged.

This was found a more rational approach than fixing a weight level for discharge.

(c) *Hyperbilirubinaemia*

Table II summarises the experience in this unit with hyperbilirubinaemias which is defined as serum bilirubin in excess of 10 mgm%. Serum bilirubin estimation is done only for babies who are judged clinically to have Jaundice of about 10 mgm%.

We have seen 43 such cases of whom 3 (7%) were due to Rh isoimmunization, (9.3%) due to ABO incompatibility and one (2.3%) was born to a mother with malaria. The latter baby was febrile, but the Blood film for malaria was negative. The placenta was not examined histologically, but no other cause of Jaundice was found. In 35 babies (81.4%) no cause was found. Of all the babies with hyperbilirubinaemia 10 (23.3%) needed exchange transfusion. It is of interest to note that all the 4 babies with ABO incompatibility needed exchange transfusion which goes to show that ABO incompatibility is by no means a mild disease as is often quoted in Western literature.(3)

(d) *Causes of Death*

The total number of deaths in this series was 62 of which 40 occurred in the low birth weight group and 22 in babies of birth weight above 5 lbs.

This gives an overall mortality of 7.4% of which 4.8% occurred in the low birth weight and 2.6% in the higher birth-weight groups. These figures are quite high and might be related to the fact that this is a highly selected series.

Table III gives a break down of the causes of death as far as could be ascertained clinically. No autopsies were done in this year.

Any baby who had any two of the following criteria is labelled as having Respiratory Distress :— (1) Respiratory Rate more than 60/min. (2) Grunting Respiration (3) Intercostal recession.

We are quite aware that this is a broad diagnosis which would include a diversity of aetiologies such as pneumonias and hyaline membrane disease, but it is not possible to resolve the diagnosis any further with reasonable certainty as most of these babies did not have chest X-rays and none had been autopsied. This group accounted for 25 deaths (40.3% of all deaths).

There were two babies who showed clinical evidence of cerebral haemorrhage and were therefore grouped separately in spite of the presence of signs of respiratory distress.

Another major cause of death was gastroenteritis accounting for 8 (12.9%) deaths, followed by severe congenital anomalies in 6 babies (9.7%). The rest were due to a variety of causes some of which could not be made out clinically.

CONCLUSION :

The highlights of one year experience is presented to help defining the problems of babies in this critical period and to throw light on these problems in order to guide us in future planning.

The problems are quite enormous and the solutions hammered out so far are not adequate, but it must be emphasised that all what is being achieved now is due to the patient, cooperation of the obstetricians and their keen interest in the welfare of the babies as well as the mothers.

The following is a broad outline for some of the policies that could be adopted in the future.

(a) *Space*: The present accomodation of the unit is very small and cannot be made to cover all the essential needs. So it is necessary in any future consideration to think in terms of constructing a new purpose-built unit. It is well known that the mother is the best person to look after a child at any age in health or disease. The newborn period is no exception and the preterm baby can, to a great extend, be looked after by his mother – under supervision. So may we suggest a new type of unit with the revolutionary concept of keeping the mother and the baby together.

(b) *Staff*:

(1) *Medical*: Newborn care is never complete without looking after the labour ward. It is our intention to do so but without a full-time long term doctor allocated to the unit, we can not venture into this aspect. In addition the unit will be an excellent teaching place for the housemen who can come on short-term basis.

(2) *Nursing*: Knowing the acute shortage of nursing staff we never like to make extravagant claims on nursing but nevertheless there are certain bare minimum requirements which have to be met to enable us to adequately cover the nursing duties throughout the 24 hours. We also believe that pupil nurses must have some experience in the newborn care and can be posted to this unit on short term basis.

REFERENCES

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TABLE I
THE NEWBORNS OF KHARTOUM HOSPITAL 1972

	Number	Percent	
Not needing any special care and discharged alive	530	63.8	63.8
Low birth weight discharged alive.	109	13.1	28.8
Other problems discharged alive	130	15.6	
Deaths in the low birth weight	40	4.8	7.4
Deaths in others	22	2.6	
Total	831	99.9	100

TABLE II
NEONATAL JAUNDICE

CAUSE	NO	PER CENT OF TOTAL	NEEDING EXCHANGE
ABO Incompatibility	4	0.3%	4
Rh isoimmunization	3	7%	2
? Malaria	1	2.3%	1
Cause could not be determined	35	81.4%	3
Total	43	100%	10

TABLE III
CAUSES OF DEATH IN BABIES BORN IN
KHARTOUM HOSPITAL

CAUSE	NO	% AGE
R.D.S.	25	40.3%
Gastroenteritis	8	12.9%
Congenital abnormalities	6	9.7%
Cerebral haemorrhage	8	3.2%
Miscellaneous	9	14.5%
Could not be determined	12	19.4%