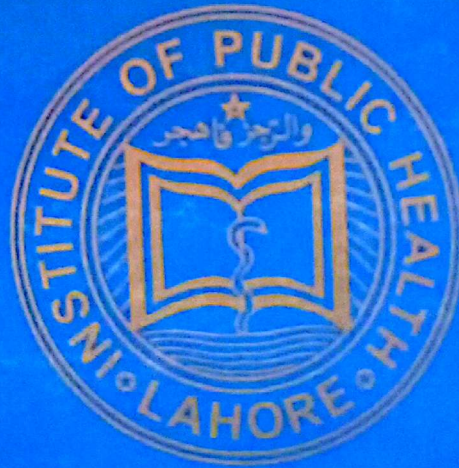


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EDITORIAL

INVITATION TO THINK

Right to be healthy is an indispensable part of human rights and is so embodied in the Universal Declaration of Human Rights. Health and human rights are interwoven to reflect the transparency of the social fabric. According to the World Health definition "Health is a state of complete physical, mental, and social well-being and ability to function and not merely absence of disease or infirmity." It is therefore mandatory to recognize that prevention, treatment or even eradication of biological disease may not ensure a healthy society. Accordingly in our pursuit of "health for all", we must not forget to recognize the importance of socioeconomic justice and principles of equality, security, liberty, integrity, respect and dignity for all human beings.

Medical and Health Professionals are among the learned intellectuals of the society who are in direct contact with the community and public at large. They enjoy deep respect and consideration of the masses. They can therefore play an important role in the transformation of society through promotion, propagation protection and education of health and human rights. Where as they are expected to observe the highest professional and ethical standards at all the times, they must include in their mission, endeavors to eliminate the plague of social and religious intolerance, sectarianism and the menace of discrimination on grounds of gender, belief, nationality, political affiliation and against minorities.

Some times, most unfortunately, the lack of formal ethical training at medical schools together with several other factors makes the community of Doctors and Health Professional vulnerable to exploitation, misconduct and malpractice. It is therefore mandatory to seriously consider the inclusion of lessons on medical ethics and the knowledge of human rights in general along with the various codes, conventions, declarations and protocols such as the Hippocratic Oath (in its myriad forms acclimatized and adopted to domestic and socio-cultural backgrounds), UN Principles of Medical Ethics in the care of detainees and prisoners, The Tokyo Declaration of the World Medical Association etc; in the curricula of Health Professionals at all levels.

With this "very much in" concept of the marriage of Health & Human Rights at a global level and the above invitation to think, we present this issue of the Pakistan Journal of Health to our readers, with profound respect and humility.

MEHDI

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This study was made possible with the cooperation and assistance of the following agencies and individuals, to whom deep appreciation is expressed.

Financial support for this project was provided by the Applied diarrheal disease Research (ADDR) Project at the Harvard Institute for International Development by means of a cooperative agreement with the United States Agency for International Development (USAID).

To our parent institution, Institute of Public Health (College of Community Medicine) which provided all the facilities so that we could spare ourselves To continue this project. To our worthy teacher Professor Dr. Shamim Manzoor without whose guidance, encouragement and administrative help probably we could have not completed the task. To Dr. Azhar Mujib who provided technical guidance in maintenance of computers and data analysis. To all the team members including the staff of MCH department who worked hard to make it possible to complete the job in time. To the Community member for their support and cooperation in the collection of data and conduction of interviews.

Editor

ADDENDUM

I request you to excuse me for the botheration to read again the article named Assessment of Breast feeding and weaning Beliefs and Practices among Mothers in a Subsection of Lahore by Ume Kulsoom and Arifa Saeed published in the last issue of Pakistan Journal of Health including the following acknowledgements.

PREVALENCE OF ANEMIA DURING PREGNANCY IN RADHO JOKHIO GOTH

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Summary

Anemia during pregnancy increases the risk of maternal mortality, fetal death, short gestation lengths, low birth weights and medical abnormalities. A cross sectional survey of hemoglobins of pregnant women was conducted in the rural community of Radho Jokhio Goth, Gadap Union Council, Sindh Province. The data was collected from the clinical registers of the PHC unit run by Baqai Institute of Health Sciences in Radho Goth. Hemoglobin levels of all first antenatal visits registered between January 1, 1991 through December 31, 1993 were included (115 cases). All 115 cases were found to be anemic according to WHO's definition ($Hb < 11 \text{ g/dl}$). Thirty-three percent of these were severely anemic ($Hb < 7 \text{ g/dl}$). The mean hemoglobin was 7.1 g/dl . The major causes of anemia include diet deficiencies, poor absorption and blood loss. Due to the serious possible outcomes of anemia during pregnancy, it is recommended that all pregnant women (especially during the last half of pregnancy) routinely receive supplemental iron. Since a large portion of women in Pakistan do not take advantage of antenatal care or have access to such care (and these women are at higher risk for being anemic or having pregnancy related complications), it is recommended that large scale health education campaigns promote improvement in quality of diet of pregnant women as well as taking iron supplementation during pregnancy. On a macro level, the advancement of women's education in general and the possibility of iron fortification of an appropriate food needs to be pursued.

Introduction

The most serious nutritional problems in developing countries are related to protein energy malnutrition (PEM), iodine deficiency, vitamin a deficiency and anemia, all of which can cause physical or intellectual handicaps and increased morbidity and mortality. Anemia during pregnancy increases the risk of maternal mortality, fetal death, short gestation lengths, low birth weights and medical abnormalities. Anemia can also reduce capacity for physical activity (reducing work productivity), impair intellectual development, reduce immune competence and increase susceptibility to infection. Chronic anemia affects attention span and concentration. With severe anemia, heart failure can also occur due to the extra work load on the heart to pump an adequate volume of

blood through the body to meet tissue oxygen requirements^{4,12}.

The lower limit of hemoglobin value for non-pregnant, non-lactating females is considered 12 g/dl . Due to increasing plasma volume, the hemoglobin of a pregnant woman begins to fall during the eight week of gestation, steadily declining until the 32nd week when it begins to stabilize. After delivery, the hemoglobin level increases to normal by approximately the third month post partum. WHO defines the hemoglobin cut off point for anemia in pregnant women as 11 g/dl . Severity of anemia is defined as follows

Mild	:	above 10 g/dl . (upto 11 g/dl)
Moderate	:	$7 - 10 \text{ g/dl}$.
Severe	:	below 7 g/dl ⁴ .

Causes of Anemia

The major causes of anemia include diet deficiency, poor absorption and blood loss. During pregnancy, there is a physiological anemia due to expansion of the mother's plasma volume as well as needs of the rapidly growing fetus and placenta. Although there is an increased efficiency of dietary iron absorption during pregnancy, iron requirements during gestation approach one gram. Most women are usually unable to meet the increased iron demands of pregnancy through dietary intake alone, even when the best of foods are available to them. Blood loss leading to anemia can be caused by chronic hookworm infection, malaria or menstruation. Having children spaced too closely together can further deplete maternal iron stores and allow no chance for replenishment. Many women have maternal iron stores and allow no chance for replenishment. Many women have excess bleeding due to incomplete miscarriage or retained placenta and are often treated inappropriately with medicines or local tonics rather than a D & C. (2,4,8)

The most common diet deficiency leading to anemia during pregnancy is iron, but diet deficiencies (especially in tropical climates) can include folic acid, protein or vitamin B 12 as well which are important building blocks required to make red blood cells. Even if there is adequate iron intake, a person can still be anemic if the iron is poorly absorbed. Type of iron and presence of promoter or inhibitors determine the bioavailability of iron. There are two different types of iron in foods, heme iron and non-heme iron. Animal proteins (especially organ meats) are the best source of heme iron and are well absorbed, independent of levels of accompanying promoters or inhibitors. Non-heme iron sources include dark, leafy green vegetables, legumes, cereals, milk and cheese. Absorption of non-heme iron is dependent on the presence of promoters and inhibitors. Important inhibitors of iron absorption include calcium, tannic acid (tea), oxalic acid, sodium alginate and phytic acid (wheat and bran). Fermentation, germination and soaking all reduce the phytase content of cereals and vegetable to allow increased absorption of iron. Ascorbic acid and meat (independent of their heme iron content) are promoters of iron absorption and in proper amounts overcome the

inhibitory effect of iron absorption inhibitors. (8,10, 12)

It has been found, in general, diets which are monotonous, based on cereal, legume or tuber as the staple, high in phytase and contain less than 50g of meat and less than 30mg of Vitamin C per day result in low bioavailability of iron and high prevalence of anemia in the community. (8) The main staple of Pakistani diet is wheat (high in phytase), which contributes to over 50% of total calorie intake and almost 60% of protein. Potatoes, rice, dal and vegetables are other important parts of their diet. Given a choice, most Pakistanis would consume a diet high in meat, fish and poultry, but most people cannot afford this. Fresh vegetables and fruits are also highly desirable, but only the upper classes consume them on a regular basis. Tea (a major source of tannic acid), mixed with milk and sugar, is a major social institution in the Pakistani life. Due to differing customs of whether tea is consumed with meals or in between meals, it is unknown how much tea contributes to reduced iron absorption in Pakistan.

Situation in Pakistan

According to the 1994 state of the World's Children (based on 1992 data), Pakistan has the thirty-sixth highest U5MR (137) in the world. Maternal mortality rate is estimated to be 500/100,000. Pakistan is one of the few countries in the world where female life expectancy is equal to or lower than that of men. Eighty percent of all maternal deaths in Pakistan are of low hemorrhage, septicemia, toxemia, obstructed labor and abortion, all compounded by anemia. It is estimated that 25-30% of all live births in Pakistan are of low birth weight (<2.5 Kg.) which is a direct outcome of maternal malnutrition. (15,16)

The National Nutrition Survey (NNS) in 1988 found 45% of lactating and pregnant women in Pakistan are anemic, primarily due to iron deficiency compounded by malaria and decreased iron absorption from high phytic acid intake of a wheat based diet. Average iron intakes are below the RDA for all age and sex groups except adults males. Hookworm and other parasites associated with anemia do not appear to be a major contributor to anemia in Pakistan. (11, 15) The prevalence of anemia is

significantly higher among females in Pakistan due to a strong son preference which manifests itself in unconscious neglect of girl children. Boys usually receive more and better food at an earlier age and are more likely to be taken promptly for appropriate medical care when sick as opposed to girls.) Other results of discrimination against girls are under investment in girls education and early marriage and + childbearing which all affect nutritional status.

It is difficult for girls who enter adulthood anemic, marry early and and repeated, closely spaced pregnancies to escape this vicious cycle which puts them and their unborn children at high risk for early morbidity and mortality. (14))

Pakistani women often avoid "hot" foods such as eggs or meat during pregnancy due to cultural beliefs about it leading to abortion or adversely affecting the unborn child. Many women actually reduce their food intake during pregnancy due to a fear of having a large child and difficult delivery. Due to the custom of males eating first in this society, the quality and quantity of food pregnant / lactating women receives is often inadequate. Many foods are often avoided during lactation due to beliefs about what the mother eating being passed through her breastmilk and causing diarrhea in her child.

Low maternal education has been correlated with high child mortality and poor nutritional status. There is a weaker correlation with infant mortality indicating that maternal education may have a greater effect on her family's nutrition status her own. Since health and survival is enhanced by better hygiene, improved nutrition and feeding practices (for both mother and child) and timely medical intervention, education may improve practice of any of these factors by enabling mothers to take a greater role in household decision making and pursuing appropriate strategies. (3) Literacy in the Sindh province is 15. 6% (24.5% male literacy and 5.2 % for females. (15)

Although poverty has often been associated with malnutrition, income appears to have less effect on a young child's nutrition than maternal education. Literate mothers seem to better use scarce resources than illiterate mothers with higher incomes.⁷ Although currently Pakistan has no overall shortage of food, a GNP higher than most other South Asia countries and an

economic growth rate of 7-8% per annum, without large-scale investment in irrigation and drainage, production of food grains and other crops will grow at a rate much smaller than the population, requiring large scale imports of basic foods by the year 2000.¹⁵

Methodology

A cross sectional survey of hemoglobins of pregnant women was conducted in the rural community of Radho Jokhio Goth, Gadap Union Council, Sindh Province. The data was collected from the clinical registers of the PHC unit run by Baqai institute of Health Sciences in Radho Goth. All of the antenatal cases which were registered between January 1, 1991 through December 31, 1993 were included, which totaled 115 cases. Hemoglobin levels are checked on all first antenatal visits (regardless of gestation duration) and noted in the register. Sahlis method (Acid Hematin) was used to determine hemoglobin levels.

Result

All 115 women were found to be anemic according to WHO's definition ($Hb < 11$ g/dl). Out of 115 cases, 67% (77/115) were found to be moderately anemic ($Hb 7 - 10$ g/dl). Thirty - three percent (38/115) were severely anemic ($Hb < 7$ g/dl). The following descriptive statistics were found :

Range	:	Hb 5.6 - 10.0 g/dl
Median	:	Hb 7.0 g/dl
Mode	:	Hb 7.0 g/dl
Mean	:	Hb 7.1 g/dl
Variance:	:	1.054
Standard Dev.	:	1.026

The ages of the Women ranged between 16-39 years. Parity ranged from primipara to twelfth gravida. Mean parity was four. The mode for parity was primipara (23/115). Analyzing data by age group (16-19, 20-24 and 25+ years for only primiparas, second gravid and third gravid, showed that women in the age group 20-24 years tended to have higher average hemoglobins (irregardless of whether this was their first, second or third pregnancy) than women in the age group 16-19 years or 25 + years.

Table 1. Frequency of Hb Levels

Hemoglobin Value	Frequency
10 g/dl	2
9 g/dl	7
8 g/dl	27
7 g/dl	41
6 g/dl	37
5 g/dl	1

Results

Strategies to combat anemia and its serious outcomes in the Sindh include nutrition education programs aimed at mothers and young girls who are Pakistan's future mothers, iron supplementation and iron fortification. Nutrition modules (including other aspects of nutrition as well) should be taught in each community or village as most girls are not in school and most women wouldn't leave their villages. The most effective teaching style focuses on high participant interaction such as use of dramas, flip charts, video, demonstration, role play, small group discussions and practical assessment of their own community. Nutrition messages in local languages could reinforced through radio and television as 95% of Pakistan have access to radio and 85% have access to television. Nutrition messages specifically addressing anemia include:

- Sign of anemia (pale, tired, weak, listless)
- Results of anemia (energy, performance work/school, pregnancy complications including hemorrhage and miscarriages, susceptibility to illness)
- Prompt checkup/proper treatment of excessive bleeding
- High fever may be malaria, should get proper treatment
- Treatment of any worm infection, good hygienic to prevent
- Encourage increased intake of meat (esp organ), egg and dark leafy green vegetables
- Increase intake of foods high in Vitamin C with meals
- Recognition of anemia-color card to check pale conjunctiva
- Proper diet/supplementary iron if needed during pregnancy

- Adequate child spacing to avoid maternal depletion of iron
- Discussion of food taboos or limitations due to finances or availability and ways to overcome or compromise so diet is balanced and adequate for whole family
- Cook with an iron pan to increase iron content of food. Currently supplemental iron is recommended during pregnancy for both prevention and treatment of iron deficiency anemia. Ferrous sulphate is the least expensive preparation available and has a high iron bioavailability as well. Its major drawback is gastrointestinal side effects usually related to dose. In areas where iron deficiency anemia prevalence is moderate or high (i.e. Hb < 11 g/dl is more than 20% of women in second half of pregnancy), recommended daily doses for prevention are as follows:

400 mg ferrous sulphate + 500 mcg foliate daily (4, 5)

Ideally, supplementation should begin during the second half of pregnancy and continue for four months. For treatment of iron deficiency anemia in pregnant women dosage depends on severity of anemia:

Sever: 200 mg ferrous sulphate + 250 mg foliate, 3 times/day

Moderate: 200 mg ferrous sulphate + 250 mg foliate, 2. times/day (4,5)

Treatment should continue until four weeks after hemoglobin levels normalize and cease to rise. Iron supplementation should be used with caution, as supplementation may cause an increased susceptibility to malaria, especially for primipar a women. Antimalarials should be given when appropriate in areas where malaria is endemic. Vitamin C should also be prescribed to be taken with supplemental iron to increase absorption. Although Vitamin C may be a bit more expensive than the ferrous sulphate alone, most Pakistanis expect to receive several medicines when visiting a doctor (and feel cheated or question the ability of the doctor if they don't!) and are willing to pay the cost. Vitamin C supplementation would be easier than trying to get them to take their iron with some other source of Vitamin C.

Unfortunately, access to health care for women in Pakistan is very low, especially in rural areas and slum areas. In rural areas, basic

Health Units exist with assigned personnel, but staff is often absent or undersupplied with necessary medications. Transport to the city is poor and expensive. For this reason, iron supplementation may not be effective in preventing or treating iron deficiency anemia for a large majority of women in Pakistan especially for those most likely to be severely anemic. Even for women with access to supplemental iron, low adherence rates are often a problem. While women need to continue to be educated and encouraged regarding nutritious diets affecting overall dietary changes sufficient to overcome anemia will be very difficult due to economic and custom constraints. Food is a very important part of culture and dietary habits are not easily changed as far as what combinations of food are eaten and how they are cooked. For these reasons, the Pakistani government should study the possibility of iron fortification.

In choosing a vehicle for fortification, it must be appropriate to the population, consumed daily with little variation among groups and distributed through a central agency. Storage time should be short to avoid color changes or inactivation of ascorbic acid. There should be a low potential for excess intake some members of the population. The type of iron fortification should be highly bioavailable and low cost. Foods which have been chosen for fortification in the past in other countries include wheat, flour, salt, sugar, fish, sauce and curry powder. Salt changes color in hot, humid climates. Sugar turns tea an unacceptable black. Wheat flour or curry powder would be appropriate vehicles for study for fortification possibilities in Pakistan. Flour has been fortified in the US and Europe but there have been no studies which have actually proven its efficacy and there are some doubts about this. Wheat flour is the major staple in Pakistan and consumed daily in the form of chapattis by all classes and ethnic groups. It is one of the first things young children are fed when supplemental foods are introduced. It is also the major source of phytate which inhibits iron absorption in the Pakistani diet. If wheat flour is distributed through several different agencies, then cooperation in fortification may be difficult. If cost becomes too great, people may switch over to eating more rice and less wheat or may be forced to cut other items out of their diet.^{4, 5, 10}

Studies have shown iron fortification of curry powder used by an Indian population in South Africa to be successful. However, children were not studied, because the researchers felt drawing blood from them would be too difficult. It was reported that parents said their children consumed foods cooked with curry powder from the age 6 months, so it was assumed that since fortified curry powder resolved anemia in a majority of the population, the same was true for children.¹⁰ In Pakistan, even if supplemental foods are introduced by age 6 months, children normally do not eat curried foods until they are much older. During nutrition education, mothers are encouraged not to give their young children the hot, curried foods typical of an adult Pakistani diet. In Pakistan, there is no such thing as "Curry powder" - each woman each makes her own curry as she cooks, using a combination of red chile powder and tumeric in addition to other spices. Fortification would have to be of one of these spices, probably the chile powder. People with the thalassemia gene are found to have an increased absorption of iron. There is a high incidence of this gene in Pakistan and people with this gene should be included in any study to make sure they will not have excess absorption of iron leading to toxicity. If it is found that they do, then this population will have to be warned about consuming fortified products - which means continuing to have either unfortified flour or curry available in the market for them.

In conclusion, it is recommended that, when possible, iron supplements should be given during pregnancy routinely. There are gastrointestinal side effects to iron supplementation so the concentration should be on supplemented during the last half of pregnancy when need for iron is greatest and morning sickness is not a compounding factor. Since a large majority of women in Pakistan do not receive or have access to antenatal care, large scale health education programs should aim at improving the quality of diet during pregnancy to include appropriate foods as well as encouraging women to seek antenatal care, including regular iron supplements during pregnancy. All pharmacies and dispensaries could be instructed to proper doses to dispense for antenatal supplements, so women who do not come for antenatal checks could at least get

supplements. On a macro level, efforts need to continue to be made in improving the education level of women, especially education aimed at practical knowledge such as nutrition, health and child care. As education level improves, improvements in health status usually follow naturally. Additionally, the Government of Pakistan could look into the possibility of fortifying some common, appropriate food with iron; this would benefit the society in general as it is not only pregnant women who are anemic, but a large percentage of women and children in general.

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DISTRIBUTION OF SUBGROUPS OF BLOOD GROUP A & B IN THE RESIDENTS OF SINDH

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Summary

The importance of establishing the reference values of the different blood groups and their subgroups in any socioeconomic and geographic set up is well understood. In this study, we have tried to give the reference values for subgroups of blood group "A" and blood group "AB", in our geographic set up. The study was carried out on the volunteers at Peoples Medical College Nawabshah Sind and A-one Pathology Laboratory Mirpurkhas Sindh.

There are several subgroups of blood group A and AB, but the most important being A_1 and A_2 as well as A_1B and A_2B . Our study indicates that subgroup A_1 of blood group A constitute 75% of the population and subgroup A_2 constitute 25% of the population while subgroup A_1B constitute 84% and subgroup A_2B constitute 16% of our population. Our results are more or less comparable to the Values given for these subgroups in the literature.

Introduction

Several subgroups of blood group A & AB exist, the most important being A_1 , A_2 , A_1B and A_2B . Approximately 20% of blood group A and AB subjects belongs to group A_2 and A_2B and the 80% belongs to group A_1 and A_1B ^{1,2}.

The distinction of A_1 , A_2 , A_1B and A_2B is most conveniently made by using the lectin *Dolichos biflorus* extract. The A_2 gene seems able to convert less H antigen to Group A then does the A_1 gene. When human red cells are exposed to anti H, they react in the following order of strength $O > A_2 > A_2B > B > A_1 > A_1B$. Other Forms weaker than A_2 are occasionally found and are called A_3 , A_x , A_m etc.

Normally Anti-A is naturally occurring antibody and is IgM type saline agglutinating antibody, active in the range of 20°C to 37°C temperature. While Anti-A may also exist in an IgG immune form, most commonly seen in the persons who have received injections of pneumo cocal or TAB vaccine, tetanus toxoid, horse serum and also occur in the persons who have been transfused with blood of incompatible ABO group, and in pregnancy where the mother belongs to group "O" and the fetus belongs to group "A" or group "AB" IgG immune antibodies readily

bind complement and are potent haemolysins. They are readily transferred across the placenta.

Table 1: The ABO antigens and antibodies

Blood Group	Antigens	Antibodies normally present in serum	Antibodies occasionally present in serum
A_1B	$A + A_1 + B$	NONE	ANTI-H
A_2B	$A + B$	NONE	ANTI-A
A_1	$A + A_1$	ANTI-B	ANTI-H
A_2	A	ANTI-B	ANTI- A_1 (1-2% OF SERA)
B	B	ANTI-A + ANTI- A_1	ANTI-H
O	NONE	ANTI-A + ANTI- A_1 + ANTI-B	NONE

The subgroups have some practical importance in respect that A_2 cells react less strongly with anti A Sera. Thus no anti-A serum is considered to be suitable for blood grouping until it has been shown to give strong reactions with group A_2 cells as well as with group A_1 cells.

Because weak agglutination by A₂ cells could be over looked and causes blood to be wrongly grouped. Further, in rare cases, Patients of subgroups A₂ have an anti A₁ antibodies active at 37°C, which can destroy transfused A₁ cells¹. Due to this practical importance of the subgrouping of blood group A and AB. It becomes necessary to determine the reference values of these subgroups in our geographic set up.

Materials and Methods

This study was carried out at the Pathology department of People's Medical College for Girls at Nawabshah. Where all the students are female and belongs to various districts of Sindh and at A-one Pathology Laboratory, Al-Shaffa Medical Center Mirpurkhas Sindh during 1992-1994 Session. All the persons who take part in this study are volunteers. Total of three hundreds and thirty five volunteers take a part in this study. Out of which one hundred and twenty five volunteers were female Medical students at Peoples Medical College Nawabshah and two hundred ten volunteers are males and females who take part in this study at A-one Pathology Laboratory. All the Volunteers have been told about the purpose of the study.

Sub groupings of A and AB blood groups is done by a solution of Dolicho Biflorus (Anti A₁ sera) which is readily available from commercial companies. Once solution is prepared, it retains validity for three years when stored at 4°C. This

lectin should not be kept at room temperature, nor should be frozen.

Procedure

1. Place one drop of a washed 10% suspension of RBC from the individual under test on glass slide.
2. Add one drop of anti-A₁ sera to the drop of RBC.
3. Rotate the slide gently for two to three minutes.
4. Examine macroscopically for agglutination.
5. If agglutination is present then it is A₁ or A₁B subgroup and if no agglutination then it is A₂ or A₂B subgroup.
6. Controls should be used with each batch: Known A₁, A₂, A₁B and A₂B cells must be set up with each batch.

Results

The results of our study are given as follow :

Discussion

This study was carried out on 335 volunteers, who have the blood groups A or AB. From which 310 volunteers belongs to group A and only 25 volunteers shows AB blood group. In our previous study⁴ blood group A constitutes 25% of whole

Table 2.

Blood Group	Rh + ve Cases		Rh - ve Cases		Total Cases	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
A - Group	291	93.13	19	6.13	310	100
A ₁ Subgroup	224	72.2	9	2.9	233	75.16
A ₂ Subgroup	67	21.61	10	3.23	77	24.84

Table 3.

Blood Group	Rh + ve Cases		Rh - ve Cases		Total Cases	
AB - Group	No. of Cases	%	No. of Cases	%	No. of Cases	%
	20	80	5	20	25	100
A ₁ B	17	68	4	16	21	84
A ₂ B	3	12	1	4	4	16

the population and blood group AB constitutes 9% of whole the population which is comparable with West Pakistan Study⁵ and Indian Study⁶ but entirely different from U.S.A.⁷ and England Studies⁸ in which blood group A constitutes 45% and 41% respectively and Blood group AB constitutes 4% in both the studies.

Similarly in European study blood group A₁ and A₁B constitutes 80% of whole the population while A₂ and A₂B constitutes only 20% of the population^{1,2}. Although our series of volunteers is very small, but it shows that A₁ subgroup constitutes 75% of our population and A₂ constitutes 25%. Similarly A₁B constitutes 84% of the population and A₂B constitutes only 16% of our population. So in this respect our study is comparable to the western studies with little difference. Unfortunately no study was available on this subject from Pakistan or India.

Results

1. Our study provides the reference value for establishing the incidence of subgroups of Blood group A and Blood group AB in our geographic set up. Which is more or less comparable to the other studies.
2. In general, blood group A is less common in our population in comparison to western population.
3. Our advise is to include Anti A₁ sera in routine blood grouping. So that one can avoid from wrong blood grouping or from transfusion reactions.

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HOSPITAL WASTE MANAGEMENT IN PUNJAB

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Introduction

The Province of the Punjab with Lahore as its capital has an area of about 20 million hectare which is 23% of Pakistan's total area.

Population in Punjab is about 65 million and average density of 314 persons/km². For administrative purposes, it is divided into eight Divisions, 32 districts and 103 Tehsils. Punjab has a continental climate, being very hot in summer with the temperature of upto 50° and cold in winter with below zero in the northern areas. Annual rain fall varies from 10 to 120 centimeters from the plain to mountainous areas.

The Province is the gravity of the country with its substantial water reserves and resultant fertility.

Due to the rapid population growth, increasing urbanisation, and haphazard industrialization in the last few years, environmental pollution is reaching to alarming stage. In Pakistan like many other developing countries, disposal of garbage is becoming a growing problem.

In Punjab about 30,000 tones of municipal solid waste comprising of considerable fraction of hospital waste is produced per day.

Current Situation

2.1 Waste Generation :

According to the data collected by EPA there are about 232 hospitals comprising of 40,403 beds in Punjab. (Fig. 1) indicates District wise distribution of total number of beds and hospitals. It has been observed that there is a distinct increase in the number of beds for the year 1984 to 1994 while the annual average growth rate is 4.6 % Table 1.

It is estimated that the total amount of waste produced is in the order of 47.0 tons per day and averages 1.18 Kg. / bed / day.

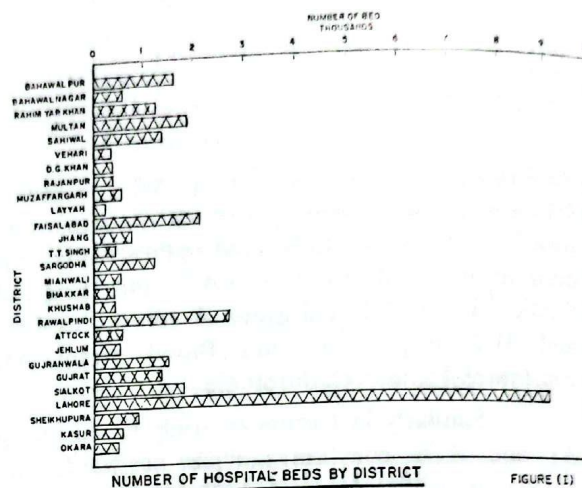


Table 1: Number of total beds available in Hospitals in Punjab (1984 - 1994).

Year	No. of Beds	Waste generated (Tons)
1984	25,050	29.5590
1985	26,106	30.8051
1986	26,665	31.4647
1987	27,568	32.5302
1988	29,418	34.7132
1989	30,422	35.8980
1990	33,753	39.8285
1991	35,305	41.6599
1992	36,929	43.5762
1993	38,627	45.5799
1994	40,403	47.6755

The quantities and types of hospital waste produced from big cities indicated in Table 2.

Table 2 : Quantities of Hospital Waste from big cities

City	Types of Waste (K / day)				Total Misc. Tons/day
	Sharps	Infectious	Plastic		
Lahore	397	2330	468	8085	11.28
Rawalpindi	196	568	118	2608	3.49
Multan	189	992	227	2392	3.80
Faisalabad	132	619	85	2714	3.55
Gujranwala	71	425	52	1462	2.01
Sargodha	32	166	11	1491	1.70
Others	1901	9532	1795	8612	21.84
Total	2918	14632	2756	27364	47.67

2.2 Waste Generation of Lahore City :

There are 29 big hospitals in Lahore comprising of about 9474 beds and waste generated is 11.65 tons per day which is stated in Table 3.

Table 3 : List of All types of hospitals in Lahore

No. Names and Locations	Beds	Waste Tons Per Day
1. Mayo Hospital, Lahore.	1,799	2.1228
2. Services Hospital Lahore.	1,050	1.2390
3. Sir Ganga Ram Hospital, Lhr.	534	0.6301
4. Lahore General Hospital, Lhr.	612	0.7222
5. Lady Willington Hospital, Lhr.	235	0.2773
6. Lady Aitchison Hospital, Lhr.	100	0.1180
7. Dental Hospital, Lhr.		
8. Govt. Mental Hospital, Lhr.	1,400	1.6520
9. Mian M. Munshi Hospital, Lhr.	125	0.1475
10. Govt. Khora Hospital, Lhr.		
11. Govt. Hospital Model Town, Lhr.	8	0.0094
12. Govt. Maternity Hospital Islampura, Lhr.	20	0.0236
13. Govt. Maternity Hospital Pathi Ground Dil Muhammad Road Lhr.	20	0.0236

14. Police Hospital, Qila Dildar Singh, Lhr.	64	0.0755
15. Suttaj Ranger Hospital, Lhr.	50	0.0590
16. Qurban Lines Hospital, Lhr.	18	0.0212
17. Infections Disease Hospital, Lhr.	170	0.2006
18. Gulab Davi Hospital, Lhr.	1,500	1.7700
19. Janki Davi Hospital, Lhr.	60	0.0708
20. United Christian Hospital, Lhr.	226	0.2667
21. Malik Jalal Din Hospital, Lhr.	79	0.0932
22. Fatima Memorial Hosp. Lhr.	330	0.3894
23. Mumtaz Bakhtawar Hosp. Lhr.	100	0.7780
24. Al-Khameni Hospital, Lhr.	12	0.0142
25. Ishaq Haroon Waqf Hosp. Lhr.	12	0.0142
26. Businessman Hosp Shalimar Link Rd. Lhr.	200	0.2360
27. Ittefaq Hospital, Lhr.	300	0.3540
28. Sheikh-Zayad Hospital, Lhr.	400	0.4720
29. Data Hospital, Lahore.	50	0.0590

2.3 Waste Composition :

The expected composition of the waste is given in the Table 4.

Table 4 : Composition of Waste - (City of Lahore)

Waste Category	Quantity Kg.	Component Fraction total waste	Bulk Density Kg/m ³	Moisture Content W/W% (KJ/Kg.)	Heat value
Biological	2330	0.572	580	95	23,000
Sharps	397	0.038	300	10	30,000
Glass	245	0.057	1500	0	
Plastics	468	0.096	500	0	40,000
Misc:	7840	0.237	500	90	20,000

It is emphasized that these estimates are approximate and the composition varies from day to day and from hospital to hospital. waste comprises of various fractions of Biological, Sharps, Glass, Plastics and Miscellaneous. The heat value of the hospital waste generated is 12,934 Kj/Kg. which is higher than that of typical municipal waste (11, 140 kj/Kg). The estimated bulk density is about 560 Kg/M³.

As the level of health care is gradually increasing it is expected that the generation of waste would also be increased.

Hospital Organisation and Responsibilities

The hospital in Punjab are run by different groups. The Secretary of Health is responsible for all teaching hospitals and Director General Health Services for smaller hospital, infirmaries and private hospitals. Within the hospitals the organization varies, however generally the medical superintendent is responsible for the administration including the overall direction of waste management.

Typical organisation chart for Private and Govt. Hospitals is shown in Fig. (2) & (3).

Fig. 2 PRIVATE HOSPITAL WASTE DISPOSAL ORGANIZATION CHART

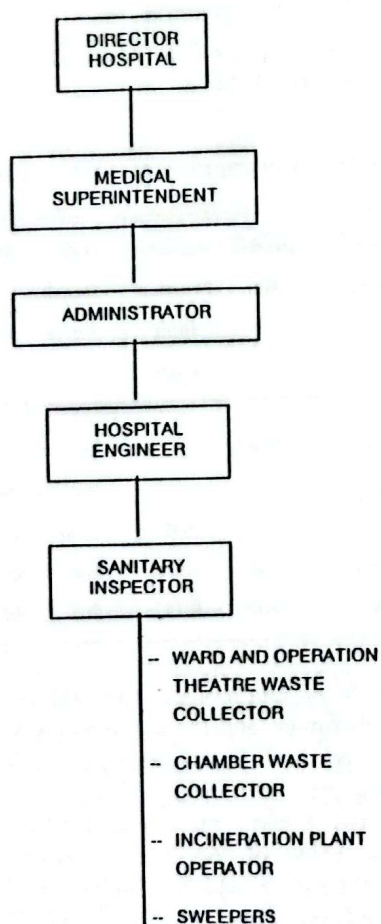
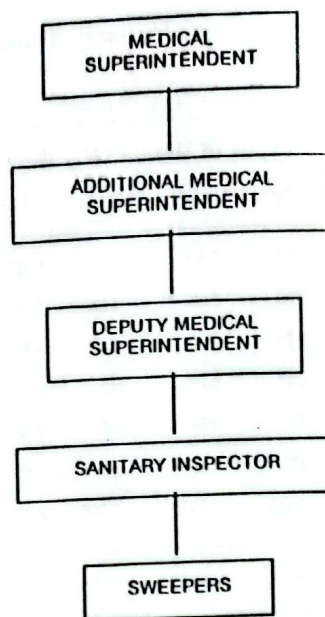


Fig. 3. HOSPITAL WASTE MANAGEMENT ORGANIZATION CHART



3.1 Waste collection & disposal system

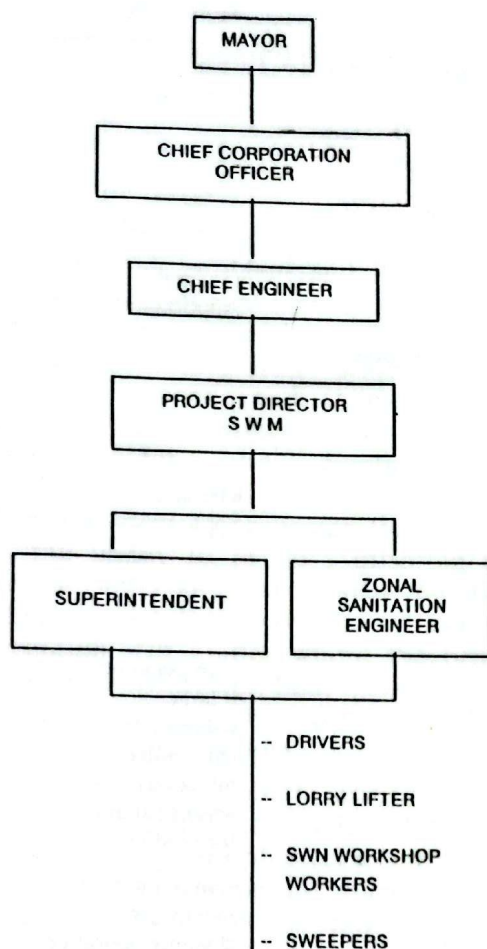
Management of solid waste is the responsibility of Local Govt. and Rural Development Department of Punjab through Municipal Corporations, Municipal Committees and town committees indicated as below :

Metropolitan Corporation	1
Municipal Corporations	7
Municipal Committees	75
Town Committees	140

The department of Solid Waste Management in Punjab within MCL is responsible for the collection, transportation and disposal of solid waste within the city. Organization chart is indicated as Fig. 4.

3.2 Waste Collection

It has been observed that in 95% of the hospitals, waste collection is poorly organized, no special bins are available for infectious waste. Within the hospitals wastes are collected by untrained staff and there is generally no segregation of sharps and infections fraction.

Fig. 4. SOLID WASTE MANAGEMENT (M C L)

It is a common practice that waste within the hospital grounds after collection is subjected to scavenging. Plastic blood bags, tubes and syringes are collected by the bare handed scavengers and sometimes are sold in the market illegally.

3.3 Transportation

Waste is transported to the disposal site in trucks, dumpers and sometime animal driven carts, along with the municipal waste.

3.4 Treatment & disposal

According to the data collected by EPA, wastes are generally disposed of at municipal solid waste tips. However, some of the private hospitals are equipped with small and simple incinerators. Where as most of the hospitals simply burn and bury the infectious waste unsecurely. No hospital has proper waste management plan.

4. Hazards associated with improper waste management

Generally hospital waste management in Punjab is haphazard and is causing a number of hazards including :

1. High risks for infectious diseases among people.
2. High risks of diseases among staff engaged in waste collection.
3. High risks of infections among scavengers, dogs, cats, and some domestic animals.
4. Odours/fumes.
5. Breeding of flies, mosquitoes, rodents and insects.
6. Unaesthetic look around the area.
7. Pollution of air, water and soil.
8. Contamination of food and other edibles.

Treatment Options

Various alternate methods of management and disposal of hospital wastes are possible and a summary of best available management technologies and their applicabilities is given in Table 5.

It can be seen that good management of hospital wastes involves a number of steps from in hospital to final disposal. In Punjab options like autoclaving and chemical disinfection do not have general applicability for the relatively large volume of waste. Incineration has the potentials to offer a safer, reliable and environment friendly method of hospital waste disposal.

Recommendations

1. A formal Hospital Waste Management policy should be prepared by the Govt.
2. Each hospital must have approved hospital waste management plan.
3. Burning of waste should be prohibited immediately.
4. Common disposal facilities (Incinerators) on cost sharing basis must be installed immediately.
5. Scavenging of hospital waste should not be permitted.
6. Concerned staff must be trained for collection, transportation and disposal of Hospital Waste.

Table 5 : Management Alternatives for Hospital Wastes

Technology	Recommended Approach	Applicability
Waste Segregation and Minimization	Segregation of non-hazardous wastes from hazardous wastes at point of generation	General applicability
	Substitution of non-hazardous for hazardous chemicals	
	Standardized packaging and labelling (colour coding) on a waste basis	
Storage	Purpose designed primary storage (e.g. double bagging)	General Applicability
	Purpose designed waste holding areas within hospitals (e.g. refrigerated storage areas)	
	Compaction of general waste, but not infectious waste or sharps	
Transport	Appropriate in-hospital transport (avoided if possible)	General applicability
	Use of vehicles designed for hospital waste transport and reserved for this use.	
Treatment Prior	Autoclaving	Cumbersome if large volumes, but can render infectious wastes suitable for landfill
	Chemical disinfection	
Incineration	Multiple chamber incinerator	Limited use, mainly for cleaning operation
Landfill	Sanitary landfill designed to prevent to prevent contamination of groundwater or land	General applicability
	Secure area, covered immediately	
Sewerage System	Sterilized liquids	Less preferred than incineration; applicable to general waste and properly treated infectious waste (Probably impractical to achieve necessary level of treatment)
		Applicable to small quantities of liquid wastes only after sterilization

PSYCHOSOCIAL ASPECTS OF INFERTILITY

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In addition to the physical aspects of infertility, this problem and its treatment can cause a significant amount of stress and distress. Often clinicians dealing with infertility problems, while armed with the latest equipment and knowledge for diagnosis and treatment have not made provision for the emotional and psychological needs of their clients. Clinicians need to recognize that not only has the ability to produce offspring been affected, infertility can impact emotional stability, social life, job performance and self perception. No matter where the primary cause of infertility lies, both members of the couple need to be treated - both as individuals and as couple.

During the initial assessment for infertility, the clinician should not only do a thorough history and physical exam, but also assess the psychological impact on the husband and wife and on their relationship as a couple. In this society, the ability to produce one's own offspring is very important. Inability to do so (especially when rest of the society around seems to be able to produce children so easily and abundantly) brings about tremendous pressures from family, friends and within oneself. A whole range of emotional turmoil can result - anxiety, depression, frustration, hostility, anger, guilt and feelings of inadequacy or inferiority. Further sexual dysfunction may even occur secondary to infertility due to the impact of psychosocial factors. A man may especially fear that infertility affects his virility. A woman may fear rejection, divorce of her husband taking another wife. After evaluating psychological impact and coping skills, the clinician should be prepared to give practical counsel on how to deal with the emotional aspects of infertility, as well as treat any anxiety or

depression present. If the clinician does not have the time or skills for such counseling, he/she should work together with someone who does have the training and skills. The counselor doesn't necessarily have to be a doctor, (e.g. a social worker, nurse, psychologist, etc.) Building of rapport and trust during the initial stages of consultation is as important for the health of the client as establishing the causes of infertility and deciding on a course of treatment.

The diagnostic work up itself may impose additional stresses on the couple as they are required to talk "publicly" about something very private or asked to perform on demand as well (e.g., for collection of semen sample). Once a diagnosis has been established and discussed with the couple, new anxieties may arise. If one partner is identified as having a problem, he/she may feel inferior, inadequate or guilty and may become depressed. They will need reassurance and support to deal with their own emotions as well as possible pressures from family/society. Unexplained infertility may be even more distressing than when a cause is identified.

Once a plan of treatment is decided and agreed upon, the clinician should set limitations for the duration of each treatment length. If specific limits are not set for abandoning unsuccessful treatment, the prolonged uncertainty can cause further frustration and disappointment. A delicate balance between encouraging hope in order to maintain motivation during treatment and being realistic and adequately prepared for failure needs to be found during the treatment phase. Stress and anxiety may effect the results of some investigations (e.g. prolactin levels) or treatments (e.g. changes in ovulation pattern). Treatment using IVF almost always increases anxiety levels

further. It is usually the last hope procedure resorted to and is quite costly in terms of time, emotional, financial investment and disruption of lifestyle. Studies have shown that couples often overestimate the likelihood of success of this method and hence may experience greater disappointment and depression if unsuccessful.

In summary, any clinician treating infertility needs to be aware of not only the physical causes and treatment of infertility, but the psychosocial impact infertility and its treatment can have on both partners. Even after initial assessment of stress and coping levels, the clinician needs to remain alert for

any new anxieties, frustrations or lack of coping skills that may develop during the course of diagnosis and treatment. Clinicians feeling inadequate in this area can team up with someone qualified or take steps to get training in communication and management of psychosocial problems for themselves and their staff.

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ROLE OF COLLEGE OF COMMUNITY MEDICINE, LAHORE IN DRINKING WATER QUALITY SURVEILLANCE IN THE PROVINCE OF PUNJAB

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This paper was presented in the National Workshop on Drinking Water Quality Surveillance held at National Institute of Health, Islamabad. This Workshop was sponsored by the Ministry of Health, Pakistan; World Health Organization, Islamabad; and the British Council, Lahore.

Introduction

The benefits of safe and adequate drinking water supplies are not automatically assured with construction of good water supply systems. Indeed experience has shown that without proper surveillance, the water supply itself may become an effective channel for spreading the water borne diseases.

It is estimated that some 500 million people in the world are affected each year by water borne and water associated diseases and out of this number, ten million (half of them infants) die from the illness like typhoid, cholera, infectious hepatitis, bacillary and amoebic dysenteries and many other varieties of gastrointestinal diseases¹.

These type of diseases can easily spread through improperly maintained water supply systems, so there is no doubt about having the necessity to establish and maintain, well organized and efficient water quality surveillance programme at national, provincial, and local levels, usually through the health authority.

Keeping in view the above mentioned facts, holding of this National Workshop on Drinking Water Quality Surveillance should be considered timely. The main aims of the workshop were:

1. To evaluate drinking water quality control in Pakistan.
2. To outline national, provincial and local strategy to implement surveillance of drinking water quality in Pakistan.

3. To establish a viable mechanism for collaboration and cooperation among governmental, non-governmental, international and other organizations playing important role regarding drinking water quality surveillance in Pakistan.

In the above mentioned context, the College of Community Medicine Lahore, being the pioneer institution of public health in the country has a vital role concerning the above cited subject in the Punjab Province. The data collected in this college from different parts of the province, with respect to drinking water quality, can provide a good source of information for developing a proper surveillance system at provincial and national level.

Drinking Water Quality Surveillance

Surveillance is the continuous public health assessment of the safety of water supplies². It involves the routine physical, chemical and biological quality control of water from source to consumer, together with sanitary inspection. Surveillance programme also ascertain the proper functioning of all components of the water treatment and supply system. Actually, few developing countries have effective surveillance programmes for drinking water supplies⁴. The proper practices and guidelines for surveillance are laid down by World Health Organization (WHO), but their application is not followed adequately.

Safe Drinking Water

Safe drinking water can be defined as "wholesome and not prejudicial to health"⁵. Implicit in this definition is the requirement that the water is without risk of causing chemical irritation or intoxication or microbial infection.

In the absence of adequate funding and trained personnel, it is difficult for an organization to undertake routine technical tasks and also promise for safe drinking water supplies to the communities.

Role of College of Community Medicine, Lahore

The College of Community Medicine Lahore, plays a vital role in surveillance of drinking water quality for the entire province of Punjab.

Role During Epidemics

During epidemics or other emergent situations, our College staff is called upon to conduct epidemiological investigations and advise/organise community health programme for the control of such unusual situations.

Teaching and Training at the College of Community Medicine

This College offers postgraduate courses like D.P.H., D.M.C.H., of the University of the Punjab and F.C.P.S., of the College of Physicians and Surgeons of Pakistan. This College also imparts teaching and training to the paramedical personnels, e.g., Sanitary Inspectors, Laboratory Technician, Dental Hygienists and Dietitians.

College Laboratory Activities

Epidemiology Laboratory of this college carries out the following functions:

Sample Collection and Analytical Capabilities

Water quality analysis are preformed at the Epidemiology Laboratory. These water samples are received from all over Punjab province (Table I). Generally these samples are sent by District Health Officers/Municipal Medical Officers of Health and other agencies like ice factories, hotels and restaurants.

As the above mentioned industries/agencies have direct relation to the human consumption, therefore these samples are sent by special messenger of the concerned office after allocating fictitious number to each sample. The names of these factories are not communicated to this lab.

It is the requirement of the lab that more than one sample should be sent at a time to make use of fictitious number purposeful. These samples are sent in properly sealed containers. A minimal fee of Rs. 40/- is charged for each sample.

At present only bacteriological examination of the water samples are carried out. Microbiological analysis for thermotolerant (faecal) and total chloroforms is fairly performed by the multiple tube method. While carrying out these examinations, it is greatly emphasized that the WHO Guidelines for drinking water quality are followed properly.

Advisory Services

The objective of this surveillance programme carried out the College is not to simply collect and collate information, but also to contribute to the protection of public health by promoting the improvement of water supply with respect to its quality.

Reports regarding these water samples are sent back to the inquiring officer/persons/agencies. They are advised whether that water sample is fit for human consumption or not. If not, specific treatment/solution of the problem which is appropriate, is advised.

Recommendations

Legislation

It is important that the surveillance agency should have powers to force suppliers to meet quality standards and also be able to take action against polluters of water sources used for drinking water.

The surveillance agency should therefore be set up by an Act of Parliament which should include a clear statement of the regulatory powers that can be exercised by the surveillance agency. This should include defining the scope for legal action to be taken by the surveillance agency against water suppliers. A proper water Supply and Pollution Act must be executed, which should have clear definition of what suppliers must comply with in terms of treatment and quality, and under what circumstances they are liable for prosecution.

Table 1 : *Bacteriological Examination of Water Testing in the Epidemiology Laboratory, Department of Epistemology, College of Community Medicine, Lahore*

Report for the Year 1993

S.No.	District Name	Total Number of Samples Received	Fit For Consumption	Unit for Consumption
1.	Attock	64	53	11
2.	Bahawalpur	77	73	4
3.	Bahawalnagar	88	48	40
4.	Bhakkar	31	24	7
5.	Chakwal	18	9	9
6.	D.G. Khan	6	5	1
7.	Faisalabad	96	59	37
8.	Gujranwala	193	104	89
9.	Gujrat	56	51	5
10.	Jhang	85	60	25
11.	Jhelum	42	31	11
12.	Kasur	46	38	8
13.	Khushab	34	27	7
14.	Khenewal	73	69	4
15.	Lahore	317	248	69
16.	Lodhran	11	9	2
17.	Layyah	33	22	11
18.	Mandibhaudhin	Nil	Nil	Nil
19.	Muzaffargarh	38	35	3
20.	Multan	159	124	35
21.	Mianwali	31	16	15
22.	Narowal	43	37	6
23.	Okara	168	123	45
24.	Pakpattan	13	10	3
25.	Rawalpindi	Nil	Nil	Nil
26.	Rajanpur	13	13	Nil
27.	Rahim Yar Khan	67	65	2
28.	Sahiwal	112	89	23
29.	Sargodha	100	76	24
30.	Sialkot	139	113	26
31.	Shaikhupura	161	81	80
32.	Toba Tek Sing	49	34	15
33.	Vehari	66	58	8
34.	Kotli (Azad Kashmir)	1	1	Nil
Total		2430	1801	629

Planning

A comprehensive plan has to be chalked out and implemented to meet the human needs of drinking water and to prevent the prevalence of all water related diseases. People may be educated at large about the relationship of potable water with healthy living. All the channels of communications should be used to high-light the methods by which water can be saved from leakages and also made free from contamination. Development of optimal guidelines for water supply and waste water discharge for both urban and rural areas are urgently required.

Training of Public Health Personnel

Following the dual philosophy water quality surveillance and control, both the water supplier agency and the health authorities responsible for the area should train their staff for the tasks involved. It is essential that all staff involved in water supply surveillance receive adequate and appropriate training for the work they are to perform. The importance of human resources was recognized early in the decade and has since evolved into a multitude of training activities at every level.

Data Collection, Monitoring and Surveillance

All the health institutions should maintain up-to-date data of water related diseases in abstract registers and this information should be disseminated to other provincial / district and other levels. This data has to be computerized at federal level and the information to be published nationwide, so it can be used for public health programming of water supply schemes. This surveillance system has to be more organized at national level. Actually there is a dire need for the establishment of a national environmental data base system. The preparatory planning activities in surveillance is the development of comprehensive inventories of water supply facilities in all districts. It is very important that research from health and engineering perspectives to be combined together at one agency.

Health Education and Community Participation

Community education and involvement are mandatory components of an effective surveillance programme. The active participation of members of the community is a vital pre-requisite for safeguarding drinking water,

particularly in remote areas with small and scattered communities. Much of the local health education should be implemented with the framework of Primary Health Care.

Water - Supply systems not only have to be well designed, constructed and operated, but they must be used well! Even the best quality water will not give a health benefit if some households continue to use other water sources. Continuous and correct use will be more likely when all the villagers, or at least, members of all sections of the community have been able to express their needs and their points of view during local planning and have been actively involved in decision - making and in putting the scheme into practice.

Although the degree of community participation will vary greatly in different countries and cultures, an attempt has to be made to define major decision on water supply in which the community should be actively involved.

Villagers, in particular the women, have expert knowledge on the local situation, which can help to prevent errors which have been made in the past. It will be very feasible where the community benefit directly from their participation. Women sector of population should be educated and actively involved in these programmes as they are mostly engaged in collection, storage and usage of drinking water in every home especially in rural areas.

Last but not the least, it is recommended that such workshops as of this one may be held periodically till most of the public health personnels get together and thus grapple the problem of surveillance of drinking water.

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STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF POPULATION PLANNING IN 1000 CASES

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Summary

The Knowledge, Attitude and Practice (KAP) towards Population Planning in 500 Urban cases was conducted by the Department of Community Medicine, Khyber Medical College, Peshawar with the help of questionnaire. The knowledge about contraceptive practice was found to be 38.4% Rural and 42.2% in Urban Population. About contraception 83.4% people in Rural and 62.2% in Urban areas consider it bad. 13.2% Urban and 8.8% of Rural population practised contraception. Practice of family planning is more common in educated people. People who are strictly religious minded, do not like it. Out of total 1000 cases 91.7% people use condoms as a mean of contraception. 2.9% of the respondents practised I.U.D's and the rest used oral contraceptive pills. For the development of country, population growth control is must and it is only possible if the people are motivated.

Introduction

Family Planning in a broad sense is a measure designed to promote well-being of the family and ultimately of the communities of the nation. It is a programme which recognises the right of every couple to determine the size of its family according to its resources and regulate the conceptions in such a way that suits the interest of the couple and the state. Family Planning is not only birth control, but has a broad scope of family limitation, birth spacing, infertility control services, marriage counselling, sex education and other population welfare activities.

The galloping rate of population growth is matter of great concern for us and for those who inhabit the third world countries.

The population of Pakistan at the time of independence in 1947 was 32 million and in 1991 the population has gone to 112 million. The growth rate of Pakistan is 3.1% which is among the highest in the World. If the population continues to grow at the current rate it will double by the year 2014 to reach 230 million. Even with the corresponding increase in resources we shall remain, where we are today in term of standards of living, housing, education, health care and employment. Therefore rapid increase in population is a challenge, that has to be faced

squarely, both by the Govt. and the people. Family Planning is the way of thinking and living, that one adapts voluntarily on the basis of Knowledge, Attitude and Practice (KAP) in the interest of people.

In order to study Knowledge, Attitude and Practice (KAP) of population planning interviews were taken from 500 Urban and 500 Rural cases with following objectives:

1. To study various practices of population planning being adopted by the population.
2. To find out the various problems faced in different methods of family planning.
3. To highlight the advantages of planned parenthood.
4. To study the impact of religion on population planning and to do away with it if it is hampering the family planning programme.

Questionnaire

The staff of Department of Community Medicine designed a Questionnaire which included information about age, educational status, marital status, income, number of children, inquiry of children etc. their age, number of sons/daughters, their feeding etc. The question about knowledge of family planning and different sources and media from which they came to know

about it. Enquiry related to practice of different methods of contraception. Information about the attitude of the sample about population planning and various causes for likeness / dislikeness of planned parenthood.

Data Collection

After preparing the Questionnaire next step was data collection from 500 rural and 500 urban population. For this a map of Peshawar city and surrounding rural areas was used and collected samples from Gulbahar, Hayatabad and University town among urban areas and DORA Village, Palosi, Sufaid Dheri, Regal and Jehangir Kalay among rural areas. Each member of the team was allocated a specific area and collected data by random sampling. Equal number of cases were selected from each area.

Results and Discussions

Out of 500 families 13.2% in urban and 8.8% of rural population practised contraception. In urban areas average number of children per family was 5.5 and in rural areas was 6.1.

Main reason for high growth rate of small portion of population practising contraception were studied in project and inferences are deduced as following:

1. Early Marriage

Average age of wife at time of marriage in urban areas was 18.1 years, while in rural areas it was 16.9 years. Age of husband at time of marriage in urban areas was 19.7 years and in rural areas was 18.7 years. This is quite contrary to most of developed countries where ages of husband and wife at the time of marriage are 25 and 23.5 years respectively. Early marriages are, therefore, one of the most important cause of high growth rate.

2. Lack of Education

Lack of education is another important factor for high growth rate. It results in decreased knowledge about contraception, different methods of contraception and advantages of population planning.

In our survey among those females practising contraception 27% were educated (class 5 or above), 0.3% were illiterate. Similarly 33% of educated males practised contraception, also 7% of illiterate used contraception.

3. Breast Feeding

Lack of breast feeding or decreased duration of breast feeding proved to be a cause of big family size, 17.60% mothers of rural 16.6% in urban areas did not breast feed their children at all. 72.8% in rural areas breast fed their children for less than 6 months. The major reason for not breast feeding their children in urban as well as rural areas was stated to be ill health of mother due to repeated pregnancies.

4. Lack of Knowledge about Family Planning

13.4% Rural and 11% urban population did not know anything about family planning, only 37% population did know enough about family planning.

The major source of knowledge about family planning in urban areas was T.V., Radio and Newspaper which together accounted for 80% of information about family planning. The role of population Welfare Programme, Traditional birth attendant (T.B.As) L.H.Vs and midwives proved to be negative, only 2.2% people stated that they were ever visited by them.

5. Attitude about Family Planning

For one reason or the other 62.2% urban and 83.4% of rural population stated that family planning is not a good practice. However, when asked about reasons only 1.4% said that it is not good for health 60.8% wanted male children 22.6% rejected it on religious ground. Out of 20%, who said that family planning is good. Only 6.6% knew that what are the results of a high growth rate.

It is concluded that the negative attitude of majority of population to family planning is basically due to lack of education or desire of more children and ignorance about devastating effects of high growth rate.

6. Need for Male Children

65% of urban and 86% of rural population did not practise contraception due to need of many male children.

In urban areas 39% and in rural areas 69.2% population wants more than 6 male children per family.

7. Dislike for Female Children

74.% rural and 36.7% urban families did not want any female child at all.

Reason for dislikeness of female children was that the females kids can not earn and heavy expenses incurred on their marriages, this was reply of 85% urban, 98% of rural population.

It was observed in those families where first 2 or 3 children were females that the parents produced more children in order to get male child and this resulted in the big family.

8. High Cost of Contraception

One of the main reasons for not using contraceptives was their high cost. In Urban and rural areas 85-90% contraception was done by males. (mainly condoms, due to their low price)

Only 15.9% contraception was done by females out of which 6% by tubal ligation, 5% by I.U.D. and only 2% oral contraceptions.

This was due to high price of oral-contraception, injections, foams or jellies which majority of population could not afford.

This is quite contrary to developed countries, where most of the contraception (above 70-75%) is done by females, mainly in form of oral-contraceptives.

Suggestions

1. Early Marriages to be discouraged

There is a trend of very early marriages in our society. It is usually in cases of girls. It is partly due to lack of option for girls or there is the fear of many parents that their honour is at stake as long as they have unmarried daughters with them. This trend can be changed by proper education of girls or change of attitude of the parents. Marriages at late age will result in less productive life and more mature thinking of parents about having children and thus growth rate can be controlled.

2. Health Education

Education about family planning can be given at many levels. It should be made a part of primary health services and even L.H.Vs or midwives can easily do it, if properly trained. It should include information for parents about disadvantages of high birth rate.

Different methods of contraception, communication through T.V., Radio Newspapers and other available media can also be used for this purpose.

3. Breast Feeding

Breast feeding is a natural method of birth control. It may be advocated and practiced for about more than two years. It helps in

contraception and is also very beneficial in controlling infection and malnutrition. Breast milk is a balanced food for the baby. For this purpose services of L.H.Vs midwives and even T.B.As can be easily used.

4. Infant Mortality Rate (I.M.R.) to be decreased

A significant decline in infant mortality rate will help families to decide for having less children since they can be reasonably sure that their babies will survive to grow into adults. I.M.R. can be brought down by health services, proper antenatal and post-natal care.

More funds should be provided to this sector and serious planning should be done if Govt. really wants to bring down growth rate.

5. Improving Socio-Economic condition

Poverty is one of the leading causes for desire of more children and especially male-children so that they can help their parents in their earnings. As couple cross the poverty line their desire to have more material-benefits is another factor influencing their decision to have smaller families. So if socioeconomic conditions are improved it will make the situation much better. It can be done by giving more job opportunities to the population, setting of more industries in private and Govt. sector and sending of Pakistanis abroad for job opportunities.

6. Education

Lack of education in mothers is another very important factor in high growth rate.

Literacy rate of Pakistan is 28% i.e. male 17% and female 11%. The rate is even less in Baluchistan, Sindh and for flung areas of Punjab which varies from 2 to 5%. The literacy rate of Singapore and Indonesia is 91% and 67% respectively. Govt. of Pakistan intends to raise literacy rate to 70% in the next decade. This is very much encouraging as more the mothers educated they are more aware of birth spacing.

7. Bias against Female Children should be finished

Dislike of female children is another factor for increased children. In a family, if first children are female then parents try to have more children in order to get boys. This trend has to be discouraged. This status of women as second-class citizens is mainly due to narrow vocational opportunities available to them. Through social pressures and prejudices, in a male-dominant

society, most education women are discouraged to compete with them in almost every field of life. For this Govt. should make legislation and females should be educated and given equal opportunities for job.

8. Community Involvement

This is very important. For this purposes local organization, working on voluntary basis or financed by Govt. should be organized at different trends. They should include educated people from all walks of life who would be motivated to use their influence for implementation of population planning. Expert advice should be made available to population under their supervision and it should be integrated with different development or health programme at National level.

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SELF MEDICATION : A LITERATURE REVIEW

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Self medication may be defined as the legitimate utilization of non-prescription medicines, alone or in addition to prescription medicines, for minor ailments without professional medical supervision¹. Another similar definition could be "using modern pharmaceutical in self-care without consulting a doctor". It is an equivalent to the expression "self-care with modern pharmaceutical"². Self treatment which forms the basis of self medication, has been considered as diagnosing a health problem, choosing medication or treatment and administering this without professional assistance³.

Self medication is an essential aspect of almost all the health care system in developing countries. It is the solution most likely to be adopted when relief is wanted but the perception of the severity and duration of symptoms gives the patient no cause for concern. It is mostly employed for self limiting disease that involve only minor discomfort or are perceived as non serious. The professional care is sought when the results don't meet the user expectation⁴.

Research done to find out magnitude of the problem varies according to the type of survey. A house hold survey in two rural communities⁵ reported that 75% of the medication consumed in 188 episodes of illness in both communities were taken without consulting a doctor. In contrast to that it was found that 40% of all pharmacy purchases⁶ and 67% of the over the counter orders (n = 9633) were for antibiotics⁷ and were without prescription.

Self medication is quite common by the younger age groups. A survey was done in Hong Kong on 4793 pupils aged from 10 - 23 years (55.9% female and 44.1% males) showed that 72.1% had taken self medication without consulting a medical practitioner⁸. Self medication has been observed in athletes^{9,10}. Health personnel have also been observed to self medicate. General practitioners¹¹ physicians working in different specialties¹² and physician having stressful life¹³

have also been observed to self medicate because of the unrestricted access to the drugs.

Practice of self medication varies according to geographical location and socio-economic conditions. Two different studies in India show that as much 47% of the drug in pharmacies in an urban center in Andhra Pradesh¹⁴ and an average of 64% in pharmacies in a number of other urban center in India¹⁵ were purchased without a doctor's prescription. In 126 families in two urban communities, 1,411 episodes of illness were recorded¹⁶ of these, 92% were treated without consulting a doctor and, again in approximately half of these cases modern pharmaceuticals were used. A comparative urban-rural study in Ghana¹⁷ reported less self medication in the urban than in the rural communities.

A health survey was done among 544 households in seven urban dwellers and four rural villages in Addis Ababa; higher illness prevalence rates were found in rural areas and in the low socioeconomic household of Addis Ababa. One third of all illness were treated by modern services, 19.9% by self care and 26% by traditional remedies¹⁸. In rural Ecuador, people have a preference for self care (including traditional remedies) and modern health services over traditional healers and drug sellers. Another strong tendency was for patients to shop around for different treatment sources. The main reasons for not using modern health services were cultural, geographic and financial inaccessibility¹⁹. In a rural Nigerian community, although the residents have access to a variety of established health services, 86.4% of those surveyed practiced self treatment at least once during the preceding 12 months³. Self medication practices have also been reported from a number of other countries like Indonesia²⁰, Thailand²¹, Ecuador²² and Peru²³.

How does the economic and educational status affect self medication practices? Self medication is more common among the higher social class i.e. better educated people are more

likely to purchase and use drugs without advice from a physician. The higher use might also be due to the fact that such people can afford to buy drugs for ailment not considered serious²⁴. In Kalutara, a small town of Sri Lanka, having a good mixture of literate and illiterate, a study was carried out. It was found that illiterate had made more visits to the doctor and self treatment was more popular in the literate²⁵.

It has been generally observed that people self medicate themselves or their children when they perceive the diseases to be minor and non - life - threatening. Acute Respiratory infections and Diarrhoea are the major killer of children in developing countries²⁶. A longitudinal study was conducted over a 3 years period in a poor, urban community in Nigeria to find out the child care practices in acute respiratory infection. Before coming to the clinic, about 32% of these children had been treated with cough medicines, 42% with antipyretics, 5% with antibiotics and 10% with hematinic. The source of such medication included medicines left over from previous prescription and those bought from chemists, shops and street vendors. Upto 64% of the children treated for ARI had been forced - fed local herbal teas by their mothers²⁷. A descriptive study on drug use to treat diarrhoea in children under five has been done in Jakarta, Indonesia. The study was done by interviewing 68 mothers with children under five. The result showed that 85.3% of the respondent treated diarrhoea of their children by themselves, 39.3% of the drugs contain Sulfathiazole and 32.1% Iodochlorhydroxyquine, 60.7% used less than the recommended doses and 64.3% medicated the child for only one day²⁸. Self medication for malaria^{29,30}, non - specific pains^{31,32}, migraine³³, genito - urinary complaints³⁴, hay fever³⁵, heart burns³⁶, insomnia³⁷, and sexual problems³⁸ have also been reported.

What are the drugs which are commonly self medicated? One of them is the use of antibiotics. A study was done to assess the purchase of antibiotics without prescription in Manila, Philippines. Antimicrobial purchases were 20.1% of all drug purchase. Purchase were made without prescription in 66.3% of 1608 transactions, most of these were Amino penicillin or Penicillin G or V (40%). The most common perceived indications were respiratory tract infection (20.2%), tuberculosis (8.8%), prophylactics (8.6%) and gastrointestinal infection (8.3%). Customers with

written prescription purchased a mean of 8 capsules of tablets while those who self prescribed purchased a mean of 4 units³⁹.

Self medication with paracetamol was exacerbated by the prescription of compound analgesic containing paracetamol by the dentist. This over dose resulted in liver toxicity and acute liver failure⁴⁰. In Europe, 2.4% of 147, 092 treated liver failure were recognized as having Analgesic patient were recognized as having Analgesic nephropathy (AN) as the cause of end stage renal failure (ESRF). It was highly frequent in the UK and Sweden. Changes in prescription and self medication practices over the last 20 years have almost eradicated A.N. from these areas⁴¹. A prospective study for 5 years mortality was done among 1042 respondents aged over 65 years to assess the relationship between mortality, hypnotic use and subjective insomnia. It was found that mortality was particularly high among the users of self medicated hypnotic⁴².

Self medication is usually for the western medicine⁴³ and are usually obtained from chemist / pharmacist, shops / super markets, hospital / clinic, friends and relatives⁴⁴. Trade names are by far the most common means of identification by action, color and shape has also been used⁴⁵.

So why do people self medicate? Self medication can be the alternative when professional care is not available and it is also chosen primarily because it has helped them in the past⁴⁶. A study was done to assess the knowledge of community about self-medication. Drugs for the treatment of cough and common cold were available in most of the respondents houses and seemed more familiar than other medicine. The drugs leaflets information from others were the first source of knowledge about medicine. The drug price and advertisement played less a role in choosing the medicine⁴⁷. A study, based on interview with 418 person treated for various health problems at two retail pharmacist, was conducted to know why the population use the retail pharmacies or out patient clinic. The reason in descending order were (1) expeditious action in consultation and treatment (2) efficacy of treatment (3) convenience. Relatives and friends influenced the decision to seek treatment at the particular retail pharmacy⁴⁸. In a study conducted in Riyadh, Saudi Arabia, 430 new adult patients were interviewed regarding their attitude and

practices towards self medication. Data showed that 69% of patients were male and 40% were Saudis.

Fifty eight percent of patient attempted self medication due to the triviality of their symptoms or to save time and money. They used mostly analgesics, vitamins, tonics and oral antibiotics. Self medication was associated with literacy and morbidity. Literate patients self medicated significantly more than illiterates. No association was found between self medication and age, sex or occupation. Patients who perceived their symptoms as minor, self medicated significantly more than those who perceived them as major. About 42% did not practice self medication because of lack of information about drugs or for fear of complication⁴⁹. Factors influencing self treatment include patient satisfaction, cost, educational level, socioeconomic factors, age and gender. It decreases the health care cost. The risks include the drug interaction between prescription and non prescription drugs⁵⁰.

Self medication can lead to a number of harmful consequences. In a study conducted in Taiwan, 90 patients of aplastic anemia were observed during a four year period. The causes in 87.8% cases were unknown, 8.9% were due to drugs and 2.2% were congenital. In the drugs exposure, majority were due to self medication, causing aplastic anemia and abnormal liver function⁵¹. In 214 children of Nigeria, haphazardly treated active otitis media was investigated. Bacteriologically *Pseudomonas Aeruginosa* was more prevalent than other microorganism. *Candida* was also found in appreciable quantity. This was due to inadequate self treatment before coming to hospital⁵². A retrospective study of 2695 patients was done to determine the incidence of drugs related hospitalization. 109 cases were identified as the primary cause of hospitalization; due to drugs, in which 45 (41.3%) cases were using drugs without medical supervision⁵³.

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MANAGEMENT OF CRANIOPHARYNGIOMA IN CHILDREN

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Introduction

Craniopharyngiomas, which are primarily tumors of childhood, are the most common intracranial tumors of nonglial origin in children. Their treatment has always presented a challenge to the neurosurgeon. Despite the benign histological appearance of these tumors, many patients demonstrate a progressively deteriorating course, regardless of therapy and die of their disease. The method of management of these tumors remains controversial; proponents of radical removal, radiation therapy, or a combination of these modalities vigorously espouse their points of view¹. Half of century ago, Cushing wrote that Craniopharyngiomas "offer one of the most baffling of surgical problems". He noted that his experience with 80 histologically verified cases was "disheartening from an operative standpoint." During the past fifty years, steroid replacement therapy, reliable valve regulated shunts, the operating microscope, and well focused radiation therapy have all proven to be valuable adjuncts to the surgical management of Craniopharyngiomas. In one of the studies Hoffman et al. concluded that total surgical excision was the treatment of choice because of the "expectation of cure of the tumor, prevention of recurrence, and avoidance of the side effects of radiotherapy." A more extreme position has been advocated by Mori et al., who stated that Craniopharyngiomas should be regraded as malignant tumors because of their location and that no forceful attempt at total extirpation should be made. Operation should therefore be regarded as merely palliative, and partial resection followed by radiation therapy should be the rule².

Materials and Methods

Twelve children were operated upon at the Neurosurgery department of Quaid-i-Azam Medical College Bahawalpur during a six year period between 1990 and 1995.

Majority of these patients had signs and symptoms of increased intracranial pressure on initial evaluation. Ten children presented with Headache and Vomiting.

Six Children had papilledema and three had optic atrophy. Visual field defects were found in nine. One child was totally blind and two were blind in one eye. Most common field defect was a bitemporal hemianopsia. One child had diplopia.

Symptoms or signs related to the endocrine system were common, being present in six patients (50%). Three patients were of short stature, two patients were obese and two patients displayed a delay in the appearance of secondary sexual characteristics. Five patients had diabetes insipidus at the time of admission.

All patients underwent computerized tomography. Both plain and contrast enhanced scans were achieved in axial and coronal planes. Evidence of tumor calcification was found in eleven cases.

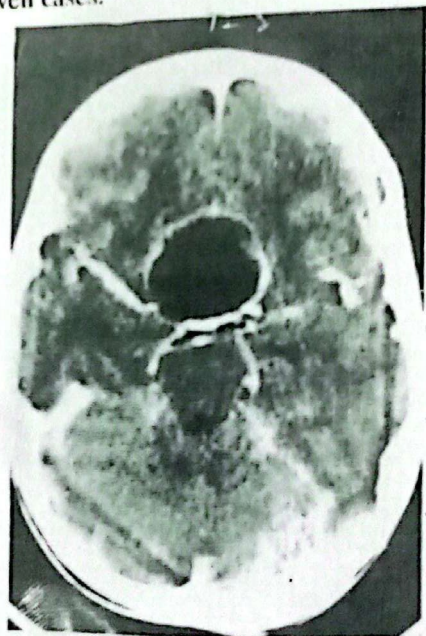


Fig. 1 Axial C.T. Scan Brain Showing cystic Craniopharyngioma.

The tumors usually contained some form of cyst formation. In two patients the tumors were solid without cyst formation. Hydrocephalus was present in seven patients. All of these patients had a shunt inserted before their tumor surgery.

The surgical approach was usually via a right frontal craniotomy. Only in one patient a left frontal craniotomy was performed. Two of the patients had total excision of their tumor at the time of surgery and the rest had subtotal tumor excision. In three patients lamina terminalis was opened to aid in resection of the tumor.

Two patients who had intraoperative bleeding from injury to the internal Carotid artery died during the first week after surgery. These were the patients in whom total excision was attempted. One patient had seizures in the immediate postoperative period. Two patients developed massive swelling of the frontal lobe with obtundation, but gradually improved with Mannitol. One patient developed Meningitis which responded to antibiotics and improved. Nine patients developed polyuria which resolved over several weeks time, but two of the patients had to be maintained on carbamazepine therapy.

All ten patients were referred for radiotherapy. Six children showed improvement in their visual fields and visual acuity and one patient suffered deterioration in acuity.

Two patients required thyroxine and one was given growth hormone. Steroids were tapered and withdrawn in all patients post operatively. Four patients were available for long term (2-4 years) follow up and all had residual tumor on repeat C.T Scan without evidence of further growth.

Discussion

While Growth characteristics of Craniopharyngiomas vary considerably, these tumors usually arise in the limited suprasellar area. The most common sites of Craniopharyngiomas are immediately suprasellar either anterior to posterior to or beneath the optic chiasma. A small percentage of these tumors are intrasellar. There are many reports in the literature concerning the large size that Craniopharyngiomas can achieve, with extension in a number of directions. Cysts have been known to extend into the posterior fossa, as far as the

foremen magnum. They can also extend laterally into the sylvian fissure or anteriorly into the frontal lobes. Given such an expansive tumor and the often densely adherent nature of these tumors, recurrence is a problem even in the hands of experienced Neurosurgeons³.

The Neurosurgeon, trying his utmost to effect complete removal of a Craniopharyngioma by employing meticulous microtechniques to separate normal from pathological structures, often reaches a point in dissection where to proceed further or to retreat could, in the long term, be equally damaging to the patient. At this stage, the risk of recurrence must be balanced against the hazard of injuring neuronal structures, particularly the hypothalamus. Improvements in the management of substitution therapy are an enormous asset in overcoming post-operative panhypopituitarism. In fact, the substitution therapy available at present is an indispensable treatment after complete removal of the tumor from the base of diencephalon⁴. When treating Craniopharyngiomas it seems that the minimum possible injury to the hypothalamus would optimize performance as adult. Exploration of a Craniopharyngioma to attempt radical resection seems justified in the hope of finding a minimal attachment to hypothalamic structures. Failing this, Surgery could be limited to spare hypothalamic function and irradiation is offered especially if the child is over five years of age. Radiation therapy seems to be the best method of gaining control of tumor left in situ. Because the risk of further endocrine and psychosocial injury by irradiation is related to the age of the patient, it may be advisable to delay radiation therapy in some younger children as far as possible. There is a small but definite risk of inducing a malignant tumor with radiation and second course of radiation may lead to Vasculopathy⁵.

Stereotaxic intracavity irradiation is a safe and efficacious treatment which should be considered as a primary surgical modality in cases of solitary cystic or multicystic Craniopharyngiomas⁶. Intracavity brachytherapy is an efficacious treatment of cystic craniopharyngiomas regard radiological results, but the treatment is not as successful in preserving vision. Cystic Craniopharyngiomas are often indolent tumors that do not need surgical treatment but if treatment is required, intracavity brachytherapy can obviate the need for craniotomy and resection⁷.

While correlating clinical and pathological features in surgically treated Craniopharyngiomas, it has been observed that squamous papillary variety has a better prognosis than the classic adamantinous variety⁸.

C.T. Scan and MRI has revolutionised the investigation of the intracranial tumors⁹. The visualization of the important parasellar structures that may be involved in tumor spread, in particular the optic chiasma and carotid artery displacement is better seen with MRI than C.T. Moreover MRI is superior to C.T. for visualization of the posterior pituitary and pituitary stalk and the cystic nature of tumors is more readily appreciated on MR Images¹⁰. The hesitation in ordering these sophisticated diagnostic studies can delay diagnosis especially with ophthalmologists. A low index of suspicion for central nervous system disease often leads to over emphasis of minimal macular disturbances. In addition to macular degeneration, peripheral retinal disease and optic neuritis, the differential diagnosis for unexplained reduction of central visual acuity or peripheral field loss must include pituitary adenoma, meningioma, Craniopharyngioma, aneurysm, optic nerve glioma and incipient prechiasmal optic nerve compression¹¹.

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MACROSOMIA - A CLINICAL APPRAISAL OF 104 CASES

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Summary

One hundred and four macrosomic new borns were studied prospectively from June 1993 to June 1994, to identify risk factors and clinical problems pertaining to macrosomia. Ninety two babies were full term, male to female ratio was 1.2 to 1, 21 mothers were grandmultipara, 34.6% mothers were diabetics and 21% were hypertensives. Family history was present in 31%. Forty three % cases were delivered by c-section, the major indications were failure to progress, obstructed labour and fetal distress. Birth injuries were 20%, birth asphyxia was found in 17.3% followed by fits in 14%. Hypoglycemia and hypocalcemia were the commonest complications (33% and 21% respectively). These metabolic complications were significantly higher in macrosomies of diabetic mothers. The three major risk factors identified were diabetes mellitus, family history and male sex.

Introduction

Macrosomia is arbitrarily defined as birth weight 4000 Gm and above or > 2 SD (97 centile) irrespective of gestation, race and sex. The macrosomic babies by virtue of their enormous size are vulnerable to obstetric complications like birth trauma, birth asphyxia and shoulder dystocia. One retrospective study¹ analysing the historical and clinical denominators of birth injuries in 107 cases found shoulder dystocia in 40% cases among babies weighing 4000 gm or more. These babies are also prone to develop hypoglycemia² and hypocalcemia immediately after delivery.

Incidence of macrosomia varies from one study to another. A retrospective case-control study, analysing the prevalence and outcome of macrosomia found that out of 6093 deliveries, 234 (4%) were macrosomies³.

Whereas effects of macrosomia in newborn are well known, causes are not well established. There is a long list of candidate causes/factors whose association with macrosomia is well known. There are medical causes like diabetes mellitus and epidemiological risk factors like multiparity, family history and sex of the baby.

Considering the medical causes first, diabetes mellitus in pregnant mothers is the most important disease producing macrosomic babies. Clinical analysis of perinatal outcome among 78 women

with diabetes mellitus showed macrosomia in 19.35% of insulin treated group, 21.05% of diet treated group and 50% in untreated group.⁴ Idiopathic polyhydramnios is associated with macrosomia independent of diabetes mellitus.⁵ Another group of researchers⁶ has shown high incidence of macrosomia in diabetic mothers. Multiparity predisposes to macrosomia through unknown mechanism as shown by Toohey.⁷ He compared the intrapartum complication and incidence among grand multipara (parity > 5) with age matched control multipara (parity 2-4). Grand parity > 5 was definitely associated with increased risk of macrosomia, being 16% compared with age-matched para 2-4 when it was 11%.

Epidemiological risk factors for macrosomia were studied among 384 pregnancies. The study identified a mother in 3rd decade of life, multiparity, postmaturity or prolonged pregnancy, abnormal glucose tolerance during pregnancy previous history of macrosomic infants and male sex as risk factors.⁸ Parental height genetically affects birth weight of baby, the baby being heavier if father is tall.⁹

Another study from AKU Karachi (6093 pregnant ladies and their macrosomic infants) found that age over 35 years, obesity, grand multiparity, impaired glucose tolerance were the major risk factors for macrosomia.³

AN ADVANCED ABDOMINAL PREGNANCY : A CASE REPORT

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Summary

A case of abdominal pregnancy is reported, which presented at 30 weeks gestation as antepartum hemorrhage. The importance of this case is that the diagnosis at an early stage is often missed and the management particularly in advanced cases, requires experienced personnel if the life of the patient is to be saved. One should not hesitate in asking for help from surgical colleagues.

Introduction

An abdominal pregnancy occurs in 1/3400 to 1/8000 deliveries⁵. Frequently it is not diagnosed before laparoscopy or laparotomy, mainly because it is not considered to be a possibility due to its rare occurrence⁴. The etiology is the same as for other ectopic pregnancies, but an association with the use of superovulation has been described². Its management needs experienced pair of hands, as implantation of placenta at abnormal site can lead to life threatening haemorrhage.

CASE REPORT

Presentation

A 30 years old married lady at 30 weeks gestation of her fourth pregnancy presented with a history of antepartum haemorrhage in emergency to Fatima Memorial Hospital Lahore. She had an ultrasound examination at a private clinic which gave a diagnosis of intrauterine fetal death and placenta praevia grade III.

Past History

In her past history she had normal menstrual cycle since menarche with no gynaecological problem like dysmenorrhea, history of pelvic inflammatory disease or pelvic surgery, had no history of use of intrauterine contraceptive device, putting her in low risk category for ectopic pregnancy. Obstetrically, she had a normal full term pregnancy followed by spontaneous vaginal home delivery of a normal alive baby five years

ago. Two and a half years later she had two consecutive spontaneous abortions. Both occurred at around twelve weeks of amenorrhea. She did not need evacuation at either occasion. Both pregnancies were confirmed by pregnancy test. She did not have any relevant problem in her medical, surgical and family history.

Present Pregnancy

She had her last menstrual period on 17-05-1994 and according to that her expected date of delivery was 24-02-1995. By dates she was 30 weeks and 2 days pregnant on the day of presentation. The pregnancy progressed well until 4 months (according to the patient), when she developed an acute attack of abdominal pain and she collapsed. She was taken to Sir Ganga Ram Hospital, Lahore, where she was resuscitated. She had an ultrasound scan, which gave a suspicion of extrauterine pregnancy. The matter was discussed with the patient and her relatives and a laparotomy was suggested but she refused and went home against medical advice. She had a repeat episode of abdominal pain 2 to 3 weeks later. It was mild this time and she attended Services Hospital for this, where she was treated with analgesics and was allowed home after one day. Later on she was getting mild episodes of pain here and there and was obtaining relief by analgesics and antacid prescribed by various family physicians and senior family members.

Presentation to us was totally different. This time she suddenly developed painless unprovoked

vaginal bleeding. She went to a local private clinic, where an ultrasound was done and a diagnosis of placenta praevia grade III was made. The baby was found to be dead and was presenting with breech. She was brought to Fatima Memorial Hospital in emergency. On admission she was not actively bleeding but was giving a history of soaking 3-4 pads at home. She was not in shock. Her pulse was 98/minute and B.P. 100/60. On abdominal examination fundal height was 34 weeks, the presenting part was not identifiable. It was Thursday night, ultrasound could not be repeated and the report she brought with her had to be relied upon. The decision was taken to perform an examination under anaesthesia the following morning to decide upon further management. Interestingly, she gave a history of high grade fever 2-3 days ago before the onset of bleeding, but the temperature on admission was normal and no focus of infection was apparent. Two prints of blood were arranged and patient was transferred to theatre.

Examination Under Anaesthesia (EUA)

On EUA, fornices were gently palpated turn by turn, no thickness was felt but at the same time baby being in breech presentation, benefit of doubt was given that there is no hard presenting part, which would have allowed us to feel placenta between it and the examining finger. A finger was gently introduced into the cervix which was open enough to allow its entry and a clot of blood was felt in the cervix. A part of it came out with the examining finger suggesting a low lying placenta. No further pressure was applied to avoid bleeding and decision was taken to proceed for caesarean section.

Laparotomy

Abdomen was opened by pfannenstiel incision. Preoperative findings were as follows:

Bowel was found to be adherent to uterus. It was difficult to establish the precise anatomy and there was nothing visible to be intensified as lower uterine segment and it was impossible to find a site for incision in the uterus for caesarean section. In an attempt to create a space on the surface of uterus, the bowel was lifted upwards with fingers and in this process the bowel peeled off from the uterus and a gush of blood with blood clots came out. The baby was delivered as breech which was followed by placenta. Baby was freshly dead,

weighed 800 grams and normally formed with no pressure effects. Once baby was delivered it was still difficult to identify the anatomy. First it was thought that it is a case of uterine rupture but on detailed inspection it was found that the patient had an abdominal pregnancy. A non gravid small sized uterus was lying in the pelvis and there was a big pouch among bowel accommodating the pregnancy. Surgical team was contacted as it was difficult for us to achieve haemostasis in bowel region. Abdominal incision was changed to inverted T by the surgical team and a good haemostasis was achieved by them by a thorough inspection of peritoneal cavity, by application of sutures in different areas. During surgery a gush of pus came out from the area under the diaphragm. Its origin could not be explained from history but it explained the episode of high grade fever few days ago. In the process of achieving the haemostasis a piece of about 10cm of mesentery from the transverse colon was removed, but on detailed inspection the colour of colon was pink and there was no evidence of vascular compromise. Seven pints of blood were transfused.

Post Operative Period

Patient made a good recovery from anaesthesia. She was started on triple antibiotic regimen and was looked after in collaboration with the surgical team. The only fear during post operative care was about the loss of viability and necrosis of bowel from the area from where the mesentery was removed. On first post operative day she developed severe diarrhoea and was leaking faeces frequently. This matter was solved when the antibiotics were changed. Otherwise she remained afebrile and well. On the 10th post operative day she showed some mucous in the faeces but surgical team was satisfied with the recovery and no change was suggested in the management. She was discharged home on 14th post operative day.

Discussion

Though an advanced extrauterine pregnancy is a rarity, but alive births resulting from an abdominal pregnancy have been reported in literature⁵. The main feature of abdominal pregnancy is that the diagnosis is often missed because it is not considered⁷. An abdominal pregnancy must be suspected whenever the fetal

parts are easily palpable under the abdominal wall or the attempts at induction of labour or midtrimester abortion fail. Lateral abdominal X-ray showing overlapping of the maternal spine by fetal parts and careful ultrasound examination should pick the diagnosis, but if the possibility is not even considered, it may be missed in less than experienced hands. This is what exactly happened in this case, that ultrasound examination at a private clinic suggested a diagnosis of placenta praevia Grade III rather than an extrauterine pregnancy. Although the u/s at a teaching hospital suggested the possibility at an early stage in pregnancy but patient did reveal the information only after the surgery when she was being counselled about the findings of operation and not before it. Abdominal implantation of an ectopic pregnancy can be primary or secondary, depending on the pregnancy implanting directly in the abdominal cavity or implantation occurring as a result of a tubal abortion or ruptured tubal ectopic pregnancy. Abdominal pain and vaginal bleeding are recognised features of abdominal pregnancy³. Acute episode of abdominal pain early in pregnancy in this patient suggest the possibility of secondary implantation after rupture of tubal ectopic, although no evidence of tubal damage was discovered at laparotomy, as both tubes were intact in their entire length. Presentation as antepartum haemorrhage is not unusual for abdominal pregnancy³.

Most authorities recommend that placenta in an abdominal pregnancy must be left in situ after trimming the membranes and cutting the cord, but if there is an obvious vascular pedicle which can be divided, or if the placenta is attached to the uterus or broad ligament, it can be removed together with those organs. Leaving placenta in situ carries very high morbidity from abscess formation. In general placental function disappears over several weeks but in some cases, can last for years. Methotrexate has been used to manage residual placenta, but can accelerate necrosis of tissue causing severe infection and adding another morbidity feature⁶. Most difficult and alarming situation develops when placenta attached to bowel or mesentery separates partially or completely on its own, leading to life threatening haemorrhage. That is what happened in case under discussion, that placenta separated completely and patient developed severe haemorrhage. Early involvement of surgical team

proved to be a blessing and the patient's life could be saved. The patient enjoyed a beneficial effect of placental implantation on mesentery due to development of extra vasculature in mesentery and close to gut, which saved the bowel from necrosis, even after removal of about 10 cm of mesentery.

Result

Abdominal pregnancy is rare, but carries very high maternal mortality i.e. 2 - 10% in western countries³, where prompt blood transfusion services are available. The outcome largely depends upon the gestation at the time of diagnosis. If diagnosed early, can safely be treated laparoscopically¹. An early diagnosis is only possible if it is suspected.

Ultrasound is helpful in diagnosis but only in experienced hands, whereas it can be misleading if performed by untrained. Early involvement of surgical colleagues and prompt blood transfusion services are life saving.

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