

Maternal Outcome in Ruptured Uterus: A Review of 72 Cases

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Abstract

This descriptive type of cross-sectional study of 72 cases of uterine rupture was conducted over 1 year (from September 2006 to August 2007) in the department of Obstetrics and Gynaecology, Mymensingh Medical College Hospital, Bangladesh to evaluate the maternal outcome of different types of surgery, to assess the maternal mortality and maternal morbidity. All cases of ruptured uterus which were received & treated and did not die within 30 minutes of admission are included in the study. Data were collected by preformed data collection sheet. The results showed that the common age groups were between 20-30 years in 31(68.00%) cases. Among all ruptured cases, 6 cases (8.33%) were Primigravida, 52 cases (72.22%) were between gravida 2nd to 4th and 14 cases (19.44%) were gravida 5th or above. Among all cases, 66 cases (91.66%) required blood transfusion; Subtotal hysterectomy was done in 36 cases (50.00%), total hysterectomy in 4 cases (5.56%), and repair of the rent in 32 cases (44.44%). Associated operations were done along with repair or hysterectomy in 13 (18.05%) cases. Postoperative complications were found in 23 (31.94%) cases. The shortest stay was 8 days & the longest stay was 62 days. The hospital staying was about 2 weeks in 48(66.70%) cases. Among 10 death cases (13.90%) maximum patient died within first 5 hours. The causes of maternal death were due to septicemia, renal failure and shock in 20%, 30% and 50% respectfully.

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Introduction

Bangladesh is a country with a population of about 150 million & a population density of about 800/sq km. More than 50% mothers are anaemic while they conceive & degree of anaemia progresses with advancement of pregnancy. Antenatal care coverage is 6%, the quality of which is questioned as health seeking behavior for complications, birth, postnatal period is not changed much. Annually about 35 million pregnancy occurs & 26 million births take place. Only 10% of these births take place at health facilities & 14% of deliveries are conducted by skilled birth attendant. The cadre of midwives who are backbone of the Maternal Health does not exit¹.

Causes of Maternal mortality remain the same for last few decades with hemorrhage at the top of the list. Rupture of the gravid uterus is one of the most common causes of death due

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to haemorrhage. Rupture of uterus during labour is more dangerous than that occurring in pregnancy because shock is greater and infection is almost inevitable^{2,3}.

Obstetrical care in the western world is at its peak. But in the developing countries, it is still at the docks due to illiteracy, male dominant society and untrained birth attendants. Majority of population living in rural areas do not have an easy accessibility to a maternity and essential obstetric care. Therefore they may develop life-threatening complications of pregnancy and the fatality rate associated with conditions like ruptured uterus is quite high².

People of remote areas have delay in seeking care mainly due to communication problem. Even people living close to hospital (within one or two kilometer) also had delay in seeking care due to poverty & fear of operation.

This was a common obstetric emergency in our country & was a major cause of maternal deaths. There were avoidable factors in most of the maternal deaths & scarcity of blood transfusion was one of the important factors. The aims of this study was to evaluate the maternal outcome of different types of surgery, to assess the maternal mortality rate from ruptured uterus and to find out maternal morbidity like-shock, ARF, urinary fistula & infection.

Methods

This Descriptive type of cross-sectional study was conducted during the period between September 2006 to August 2007.

It was conducted in the Obstetrics & Gynecology department of Mymensingh Medical College Hospital (MMCH), Bangladesh which is the largest referral hospital in greater Mymensingh region including Mymensingh, Netrakona, Tangail, Jamalpur & Sherpur districts.

All cases of ruptured uterus which were received & treated and did not die within 30 minutes of admission were included in the study.

Exclusion criteria were brought in dead or died within 30 minutes of admission. Data were collected by preformed data collection sheet. Interview schedule consists of age, distance from hospital, total hospital staying, associated obstetric complications, type of surgery performed, blood transfusion given or not, post operative complications and causes of maternal mortality. Analysis was done by Microsoft Excel.

Results

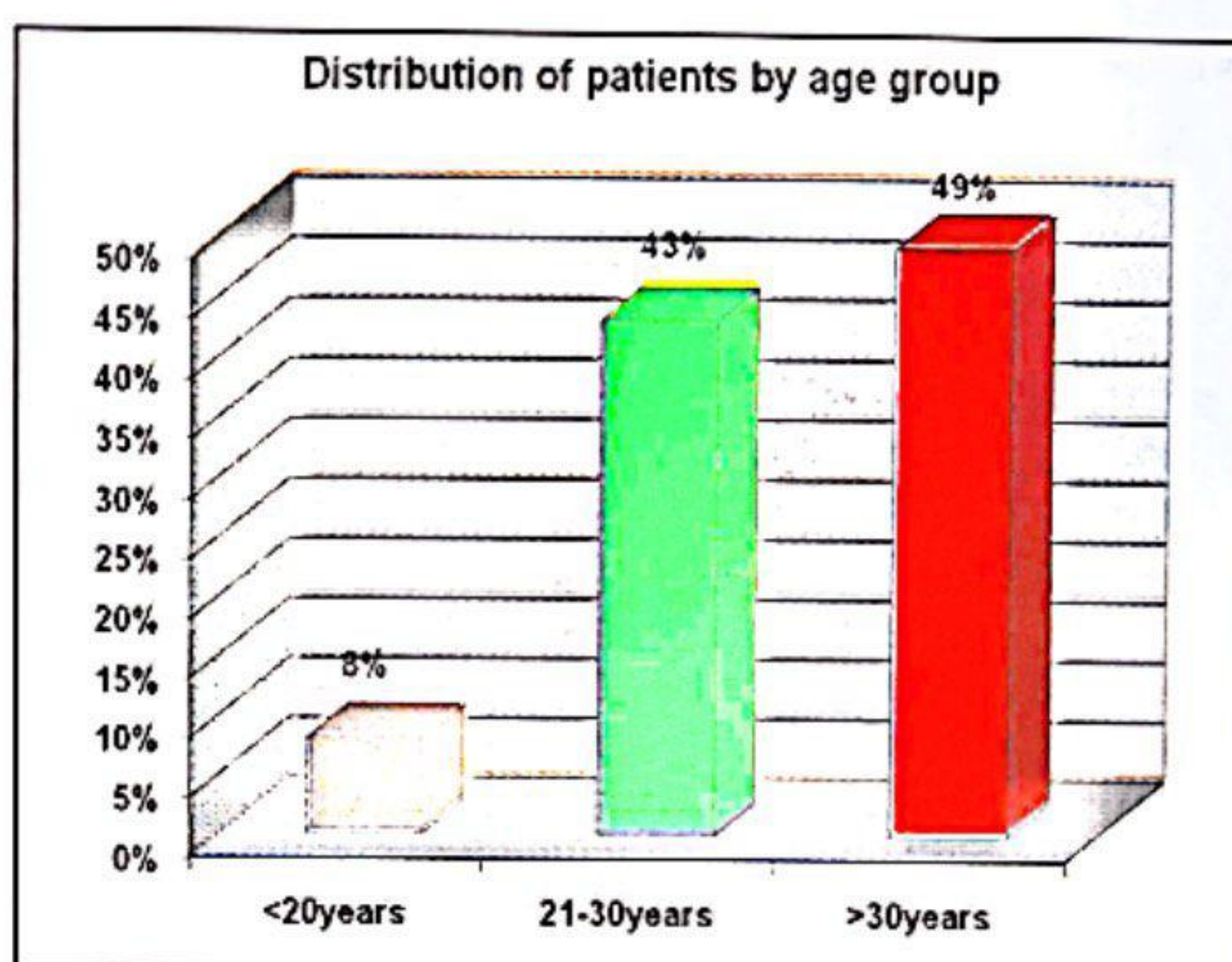


Figure 1: Distribution of patients by age group (n=72).

The study revealed that the age range was <20 to >30 years. 6(8%) cases were in < 20 years age and 31(68.0%) cases were in 20 – 30 years age group, while 35(32.0%) cases were in >30years.

Table-I Distribution of patients by habitation (n=72).

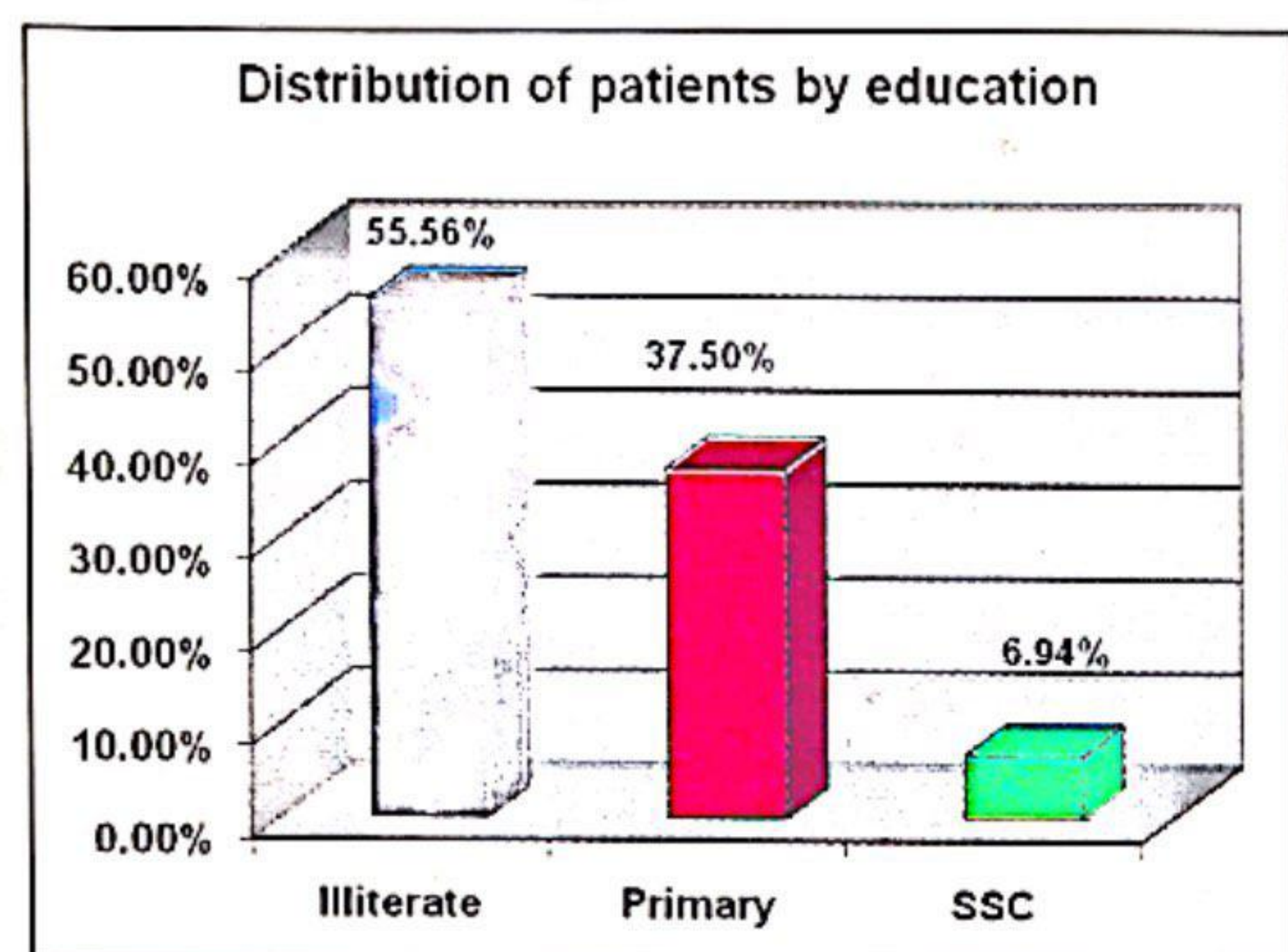
Residence	No of cases	Percentage
Rural area	63	87.50%
Urban area	09	12.50%

Out of 72 cases, 63(87.50%) were from rural area and 09(12.50%) were from urban area.

Table- II Relationship between parity & ruptured uterus (n=72).

Parity	No of patient	Percentage
0	0	0%
1	6	8%
2	10	14%
3	18	25%
4	24	33%
5 or above	14	20%

Most of the affected patients were grand multigravida (para 4 & above).

**Figure-2** : Distribution of patients by education (n=72).

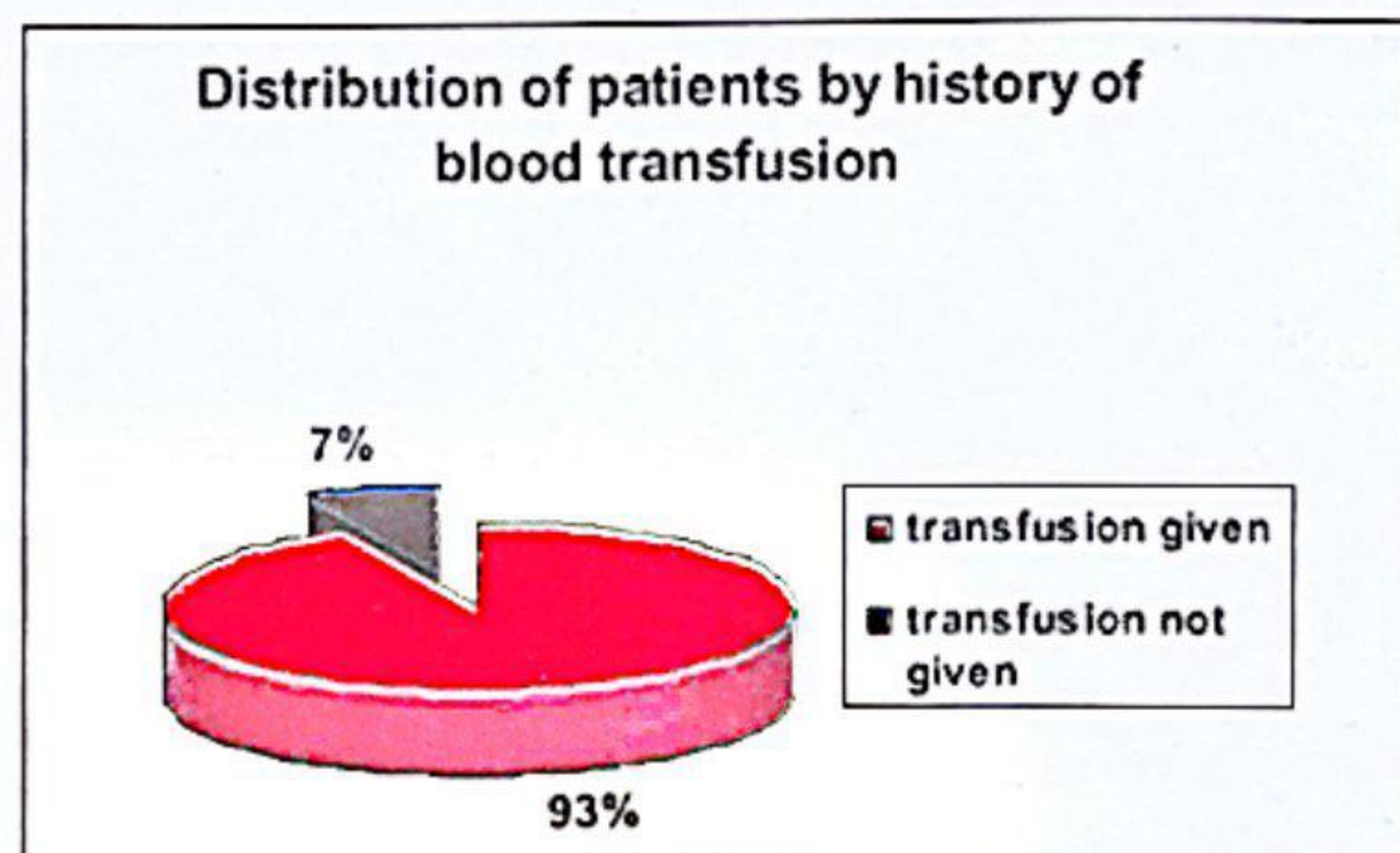
Concerning educational status of the studied sample, it was observed that highest number 40(55.56%) of patients were illiterate, while 27(37.50%) had literacy status up to primary level, 05(6.94%) up to secondary level.

Table-III Associated Obstetric Complication of ruptured uterus cases (n=72):

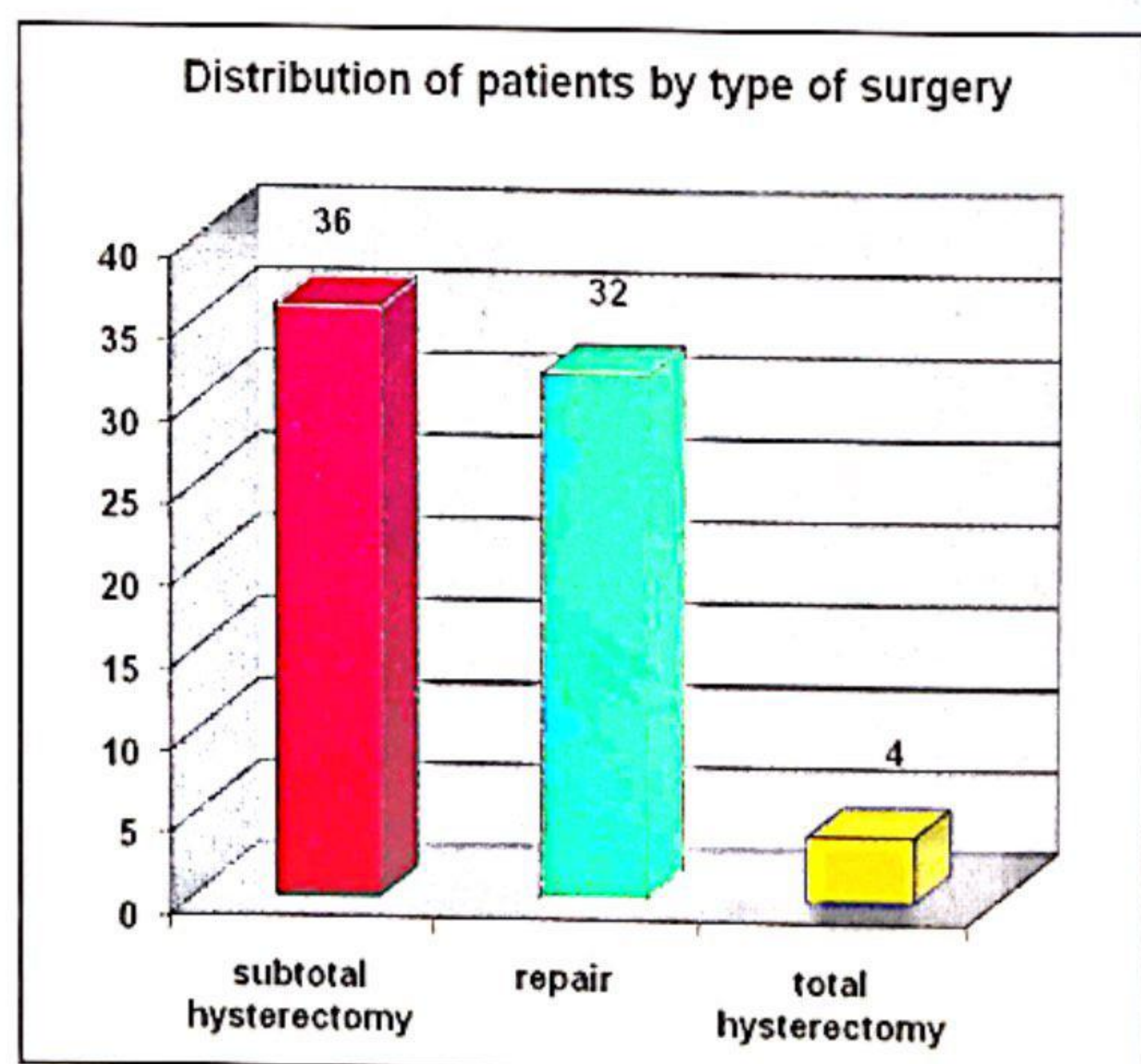
Variable	No of cases	Percentage
P.I.H.(Pregnancy induced hypertension)	1	1.39%
Sepsis	1	1.39%
Malpresentation	3	4.16%
Antepartum haemorrhage	2	2.78%
Vulval haematoma	1	1.39%
Eclampsia	1	1.39%

In this study, it was found that, 9 cases (12.50%) there were associated with obstetric complications. These include P.I.H. in

01(1.39%) cases, Sepsis in 01(1.39%) cases, Malpresentation in 03(4.16%) cases, Antepartum haemorrhage in 02(2.78%) cases, Vulval haematoma in 01(1.39%) cases, Eclampsia in 01(1.39%) cases.

**Figure-3** : Distribution of patients by blood transfusion (n=72).

Out of 72 cases, 67(93.00%) patients required blood transfusion and 05(7.00%) patients did not require blood transfusion.

**Figure-4:** Distribution of patients by type of surgery.

Subtotal hysterectomy (50.00%) was done in 36 cases. Total hysterectomy was done only in 4 cases (5.56%). In 32 cases(44.44%) patient underwent repair of the rent.

Table-IV Associated operation done along with repair or hysterectomy (n=13):

Variable	No of cases	%
Salpingoophorectomy	02	2.78%
Repair Bladder	07	9.72%
Exploration of vaginal haematoma	01	1.38%
Repair on trigone of bladder with suprapubic cystostomy	01	1.38%
Tubectomy	02	2.78%

It was found that, associated operation done along with repair or hysterectomy in 13 (18.05%) cases. These include Salpingoophorectomy in 02(2.78%) cases, Repair Bladder in 07(9.72%) cases, Exploration of vaginal haematoma in 01(1.39%) cases, Repair on trigone of bladder with suprapubic cystostomy in 01(1.39%) cases, Tubectomy in 02(2.78%)

Table-V Post operative complication (n=72) :

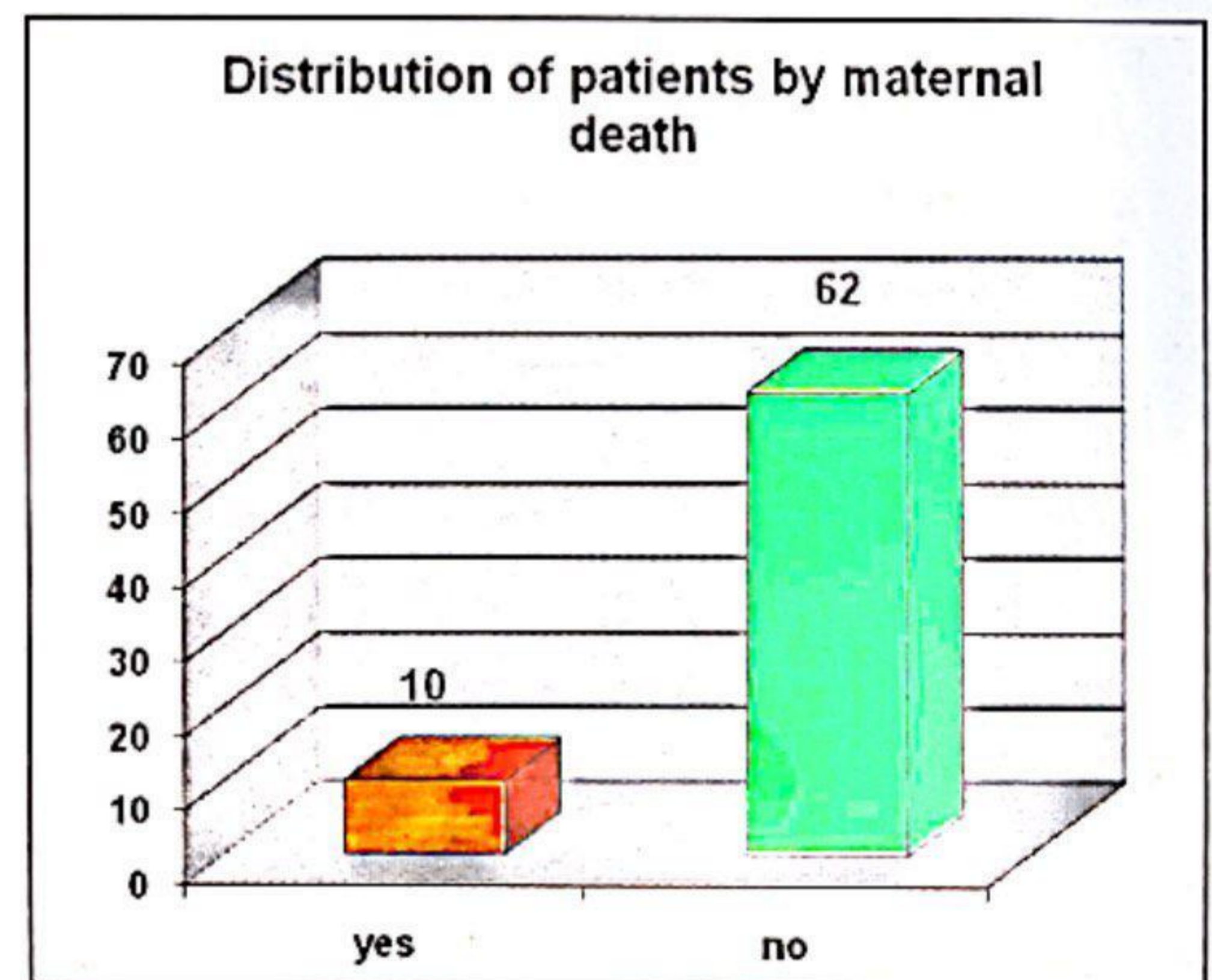
Variable	No of cases	%
Shock	02	2.78%
Acute Renal Failure	03	4.16%
Peritonitis	04	5.55%
Wound infection	04	5.55%
Burst Abdomen	02	2.78%
Urinary fistula	02	2.78%
Wound dehiscence	03	4.16%
Cerebro-vascular Disease	01	1.39%
Anesthetic hazard	02	2.78%
No complication	49	68.05%
Total	72	100%

In this study, it is found that, 23 cases (32%) there were postoperative complications. These include shock in 02(2.78%) cases, acute renal failure in 03(4.16%) cases, peritonitis in 04(5.55%) cases, wound infection in 04(5.55%) cases, burst abdomen in 02(2.78%) cases, urinary fistula in 02(2.78%) cases, wound dehiscence in 03(4.16%) cases, cerebro-vascular disease in 01(1.38%) cases, anaesthetic hazard in 02(2.78%) cases. Remaining 49 cases (68%) there was no complication.

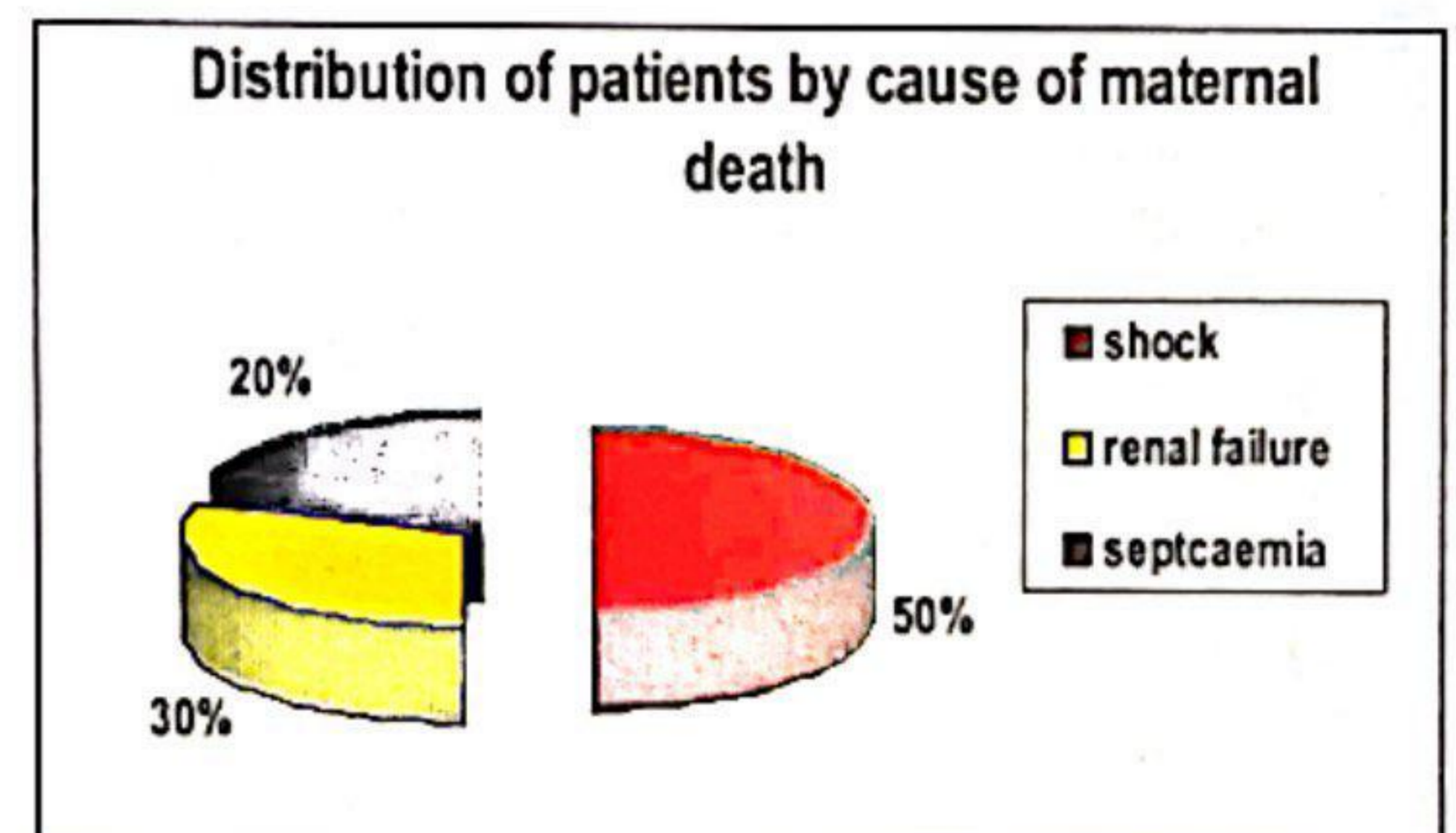
Table-VI : Distribution of patients by hospital staying (n=72):

Day	No of patient	Percentage
<7day (death case)	10	13.90%
8 -14 day	48	66.70%
15 or more	14	19.40%

Regarding hospital staying, <7 days were in 10(13.90%) cases, between 8-14days in 48(66.70%) cases, 15 or more days in 14(19.40%) cases. The longest duration of hospital staying was - 62days

**Figure-5** : Distribution of patients by maternal death.

In this study, maternal case fatality rate was high 10 cases (13.90%) among 72 cases.

**Figure-6:** Distribution of patients by cause of maternal death (n=10)

In this study, the cause of maternal death was due to septicemia, renal failure and shock in 20%, 30% and 50% respectively.

Discussion

The result of the study revealed that ruptured uterus is a serious complication of pregnancy and labour and may lead to maternal death if not diagnosed and treated in time.

In Farhana's study it is shown that, age of the patients ranged from 18 to 45 years with a mean of 35 years. The youngest patient was 19 years & oldest one 45 years of age⁴. In present series, the peak incidence was found to be in the 20-30 years age group. The youngest patient was 22 years & oldest patient was 40 years of age. 49 cases (68%) found in between 20-30 years. Thus this study is consistent with other studies^{5,6,7}.

Regarding residence, 87.5% cases came from rural areas & 12.5% were urban women.

In previous studies in developing countries showed rupture occurs most commonly in grand multigravida (para 4 & above). In Present study, among all ruptured cases, 6 patients (8.33%) were Primigravida, 52 patients (72.22%) were between gravida 2nd to 4th and 14 patients (19.44%) were gravida 5th or above. So this studies consistent with other study. Grand multiparty in addition of being in poor general health, did not know about contraceptives to prevent pregnancy & had no access to family planning services due to illiteracy, poverty, taboos & living in remote rural areas. Similar to other studies, in this series most of the patients (56%) were illiterate. Due to illiteracy, they did not know, where to go, when to go and how to go during their emergencies.

Most of the patients were illiterate 40 cases (56%). There was no patient found in higher secondary group (HSC) & above. Thus this study is consistent with other studies^{5,6,7}.

In this study, 67(93.00%) patients required blood transfusion and 05 (7.00%) patients did not require any blood transfusion. In 48 cases required 2-4 units of blood, 11 cases required 1 unit, 7 cases required more than 5 unit of blood & 6 cases did not require any blood

transfusion. Highest unit of blood required for a patient were 10 units but patient was not saved. Scarcity of blood was quite evident in most of the cases which engulf time to start resuscitative measure & was found main cause of delay to start definitive treatment. In majority of cases, volume expander (plasma expander) colloid like substance (HAES, Haemaccel) played a good role in controlling plasma volume, which was simultaneously used with blood. This finding consistent with other study^{4,5,6}.

A subtotal hysterectomy (50.00%) was done in 36 cases. Total hysterectomy was done only in 4 cases (5.56%). In 32 cases (44.44%) patient underwent repair of the rent.

In other study found, most of the patients (47%) underwent subtotal hysterectomy, 35.3% had rent repair⁵. According to Ethiopian study of Adigrat, 37% case had Total abdominal hysterectomy, repair with or without bilateral tubal ligation was done in 38.9% cases. Of the cases 24.1% had subtotal hysterectomy⁶.

In this study postoperative complications were found in 23 (31.94%) cases.

In Abbottbad's study showed that, 85.3% patients had postoperative pyrexia, 8.8% patients had wound infection. 1 patient had pulmonary embolism & another needed intensive care due to shock⁵. According to Adigrat's hospital study of Ethiopia 16.7% had wound infection, 12.5% had Vesico-vaginal fistula, 10.4% had urinary tract infection & 4.2% had pneumonia⁶.

In this study, the cause of maternal death was due to septicemia, renal failure and shock in 20%, 30% and 50% respectfully.

In the present series, the shortest stay was 8 days. The hospital staying was between 8-15 days in (66.7%) cases, >15 days in 19.4% cases. the longest stay was 62 days. Comparing with other study regarding hospital staying 10-14 days was 20.4% cases, 2-3 weeks was in 34% cases, more then 3 weeks

in 46% cases⁴. Thus this finding consistent with other study^{5,6}. Highest duration of hospital staying was 62 days where postoperative period was eventful and due to burst abdomen reopening of abdomen was required and then thorough peritoneal toileting & repair was done but again patient developed wound dehiscence & resuturing was done. Poor general condition & repeated wound infection made her bound to stay into hospital for longer duration.

Comparing with another study, post operative pyrexia was found in 54% cases, peritonitis with abdominal distension was found in 46% cases, abdominal wound infection in 76% cases, burst abdomen in 10% cases, urinary tract infection in 34% cases, malaria in 8% cases, 8% developed deep vein thrombosis in 3rd post operative weeks⁴. Thus this finding consistent with present study.

Among 10 (13.90%) death cases maximum patient died within 5 hours. Maternal mortality in Bangladesh remains the same for last few decades with haemorrhage at the top of the list. Rupture of the gravid uterus is one of the most common causes of death due to haemorrhage. Similar observations are found from other authors^{6,7,8,9,10}. Nonavailability of adequate blood for correction of hemorrhagic shock before, during & after surgery was one of the important causes of death^{11,12,13,14,15}.

Conclusion

The results show that, this is a common obstetric emergency in our country & is a major cause of maternal & foetal deaths. Evaluating the major causes of uterine rupture in present series, it is evident that, the occurrence of most of the accidents (uterine rupture) would have been obviated if comprehensive obstetric care could be provided to those women during their pregnancies & labour^{16,17,18,19}.

As this is a hospital based study, it will represent only the tip of the iceberg. But this

will give us some insight into the causes & management of the serious catastrophe of labour that may ultimately help the planners to make proper measure to minimize the incidence of ruptured uterus. This will help to fulfill targets to reach Millennium Development Goal (MDG) 4 & 5.^{11,12}

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