



AN ANALYSIS OF BURNS INJURY DURING PREGNANCY

Dr. B. Shankari*

M.S.,M.Ch, Department Of Plastic Surgery, Govt Royapettah Hospital, (Kilpauk Medical College) Chennai *Corresponding Author

ABSTRACT Burns during pregnancy is a clinical state that demands special management. It can be a serious threat to the life of the mother and the foetus. It leads to severe medical consequences to the women and the foetus. Though it is rare, it can be a devastating injury. It is also associated with various social and economic problems related to rehabilitation. Hence, a comprehensive study was undertaken to assess the maternal and foetal outcome in relation to burns extent and gestation.

KEYWORDS :**Introduction**

In our centre at Government Kilpauk Medical College Hospital, every year more than 1500 people with severe burns injury require medical intervention. Burns is a damage to the skin and other organs which is caused by thermal source. Burns are always one of the most devastating injury leading to death or disability. It causes major economic consequences and severe long term mental and physical complications.

Reproductive age is the most important stage of life. The most positive health characteristics are observed in this age group.

Burns in women of reproductive age group in developing countries occur more frequently when compared to those of developed countries. It presents a special problem for the gravid woman and her foetus.

Physiological changes during pregnancy affect the patient with burns during this period. Human physiology alters during pregnancy and adds further stress to the system.

The factors that play a role in the survival of the mother and foetus are as follows:

1. Body Surface burn percentage.
2. Gestational age.
3. Depth of the wound.
4. Burn complications.
5. Accompanied with Medical illness and other injuries.

Foetal health directly depends on mother's health. Foetal outcomes heavily depends on maternal outcomes. A close cooperation between surgical and obstetric team and individualisation of management is necessary. Few studies are done on mortality caused by burns in this age group, especially during pregnancy.

Hence, the study was conducted for a 1-year period to determine the Epidemiological factors and burn outcomes in pregnant women admitted to Kilpauk Medical College Hospital in Chennai.

Materials and methods

This retrospective study was carried out for a period of 1 year from January 2015 to December 2015.

A total of thirty pregnant burns women in the age group 15- 40 years admitted to our burns unit were analysed. The medical records and documents of all the pregnant women with burns who were admitted to our hospital were examined.

The required data including age, burn percentage, cause of burns, extent and severity of burns, gestational age and foetal and maternal outcomes were collected. The extent of burns is estimated on the basis of the burn percentage of total body surface area (TSBA) using the Lund and Browder Chart. In order to clinically assess the severity of burns, a four-grade classification was used.

The maternal and the foetal outcomes were also analysed. The data collected was entered into a standard proforma prepared for this study

and were analysed. On the basis of the analysis and observations, results were drawn and discussed with the other relevant literatures.

Results

In this study, 30 cases of pregnant burn victims in the age group of 15-35 years were assessed. The gestational age of these patients varied from eight weeks to 34 weeks with 11 cases in first trimester, 13 in second trimester and 6 in the third trimester.

The mean burn percentage of body surface area was from 10% to 95% TSBA. The patients were categorized based on their trimester and their burn extent.

In burns, up to 25% TSBA, there were no deaths in the 1st and 2nd trimester. One out of the two cases in the third trimester died due to septicaemia. There was no other foetal death or obstetric complications in any of these patients.

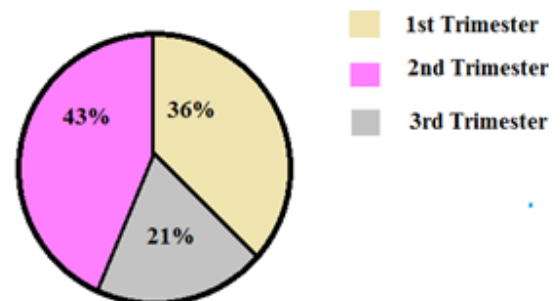
Burns of 26%-50% TSBA led to maternal death in all cases in the first trimester. Out of the 6 cases in 2nd trimester two patients survived in which one had spontaneous expulsion of dead foetus. The other continued her pregnancy. On the 3rd trimester out of the 3 cases only one patient died. The other two were discharged with healthy foetus.

In Burns of 51%- 75% and 76%-100% TSBA, there was mortality of all the patients along with foetal death.

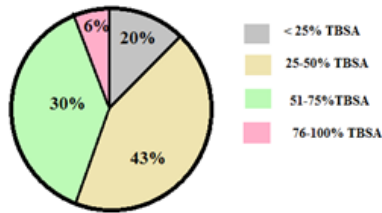
Maternal and foetal outcome in relation to TBSA are shown in the following tables.

Total no of cases in each trimester.

1 ST Trimester	11(36%)
2 nd Trimester	13(43%)
3 rd Trimester	6 (21%)

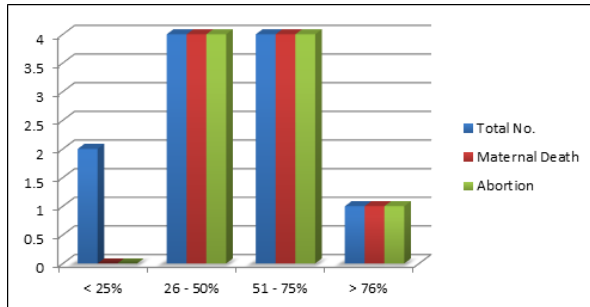
**Total no of cases in each % of TSBA**

<25%	6 (20%)
25-50%	13 (43%)
51-75%	9 (30%)
76-100%	2 (6%)



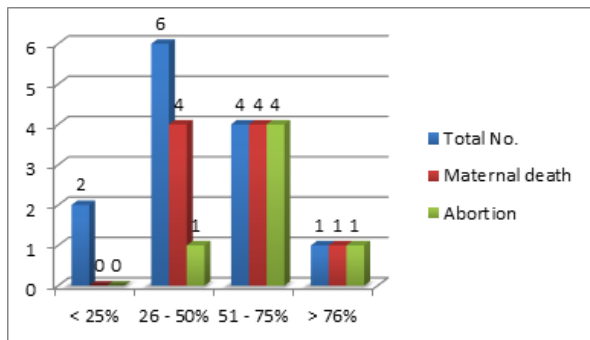
Distribution of burns extent in 1st trimester

	NO OF CASES	NO OF MATERNAL DEATH	NO OF CASES ABORTED
< 25%	2	0 (0%)	0 (0%)
25-50%	4	4 (100%)	4 (100%)
51-75%	4	4 (100%)	4 (100%)
76-100%	1	1 (100%)	1(100%)



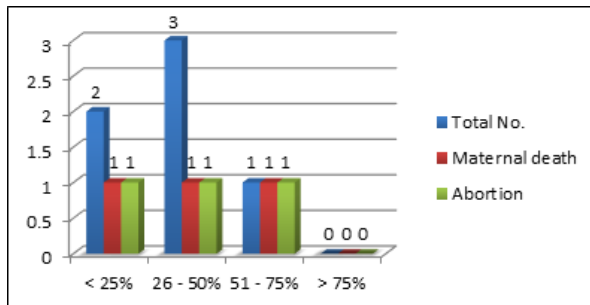
Distribution of burns extent in 2nd trimester

	NO OF CASES	NO OF MATERNAL DEATH	NO OF CASES ABORTED
< 25%	2	0 (0%)	0 (0%)
25-50%	6	4 (65%)	1 (16%)
51-75%	4	4 (100%)	4 (100%)
76-100%	1	1 (100%)	1(100%)



Distribution of burns extent in 3rd trimester

	NO OF CASES	NO OF MATERNAL DEATH	NO OF CASES ABORTED
< 25%	2	1 (50%)	1 (50%)
25-50%	3	1 (33%)	1 (33%)
51-75%	1	1 (100%)	1 (100%)
76-100%	-	- (0%)	- (0%)



Discussion

Burns during pregnancy are a clinical state that depends special management and requires early and adequate resuscitation. Early intervention and obstetric care are required in the management of these patients.

Hence, in order to minimise the maternal and foetal mortality rates, care should be given to pregnant women considering the foetal status. Treatment for pregnant women with burn requires a close co-operation between the Gynaecologists and the Burn Trauma Surgeon. Burns injury during pregnancy is a major problem in developing countries. This high prevalence is peculiar in our community probably because of illiteracy, unsafe cooking habits and our social custom of dowry.

In this study, it showed that abortions during the first trimester was 74%, in the 2nd trimester 54% and in the 3rd trimester 61%. This is in accordance with the finding of V. Mayo et al [6]. This highlights that as far as pregnancy is concerned, burns has a deleterious effect on the foetus and proceed to abortion. It precipitates to abortions and premature labour on a very significant scale.

This study showed that maternal mortality increased with burns of > 25% with maximum in burn patients with more than 50% TSBA. This is in accordance with the study of Rayburn et al [9]. There is a positive relationship between the percentage of burns and the risk of maternal and foetal death.

Most of the burns occurred in the age of 15-40 years of age. This is probably because of increasing familiar stress like cooking with unguarded fire, rearing of smaller children, overburdened household activities like living in an overcrowded space with minimal amenities leading to frequent accidents. Also in developing country like India, females are married at an early age and are more exposed to social and family stress

In this study severity of burns injury appears to be responsible for both maternal and foetal outcomes. The maternal and foetal outcomes and the difficulty in the management of these patients point to the fact that burns preventive measures have to be undertaken in countries like India.

Conclusion

Burns during pregnancy are common in developing countries like India, where burns is more common in females. Since, majority of them are accidental, there is an opportunity for prevention by teaching women certain forms of preventive measures.

It is reasonable to consider the possible integration of a focused injury prevention and also mental health promotion into the current prenatal care delivered to pregnant women.

Conducting educational programs and taking preventive measures play a major role in decreasing maternal and foetal morbidity rates caused by burns among the pregnant women.

REFERENCES

- Guo SS, Greenspoon JS Khan A M. Management of burns injuries during pregnancy. Burns 2001; 27: 394-7.
- Taylor J, Plunkett G, MC Manu W et al. Thermal injuries during pregnancy. Obstetric Gynaecologists 1975; 47: 434-8.
- Mago V, Ahmed I, Kochar N; Barian LM Burnt pregnant wives: A social stigma. Burns 2005; 31: 175-7.
- MC Cauley RL, Stenberg BA, Phillips L.G, Blackwell SJ, Robson MC. Long Term assessment of the effects of circumferential truncal burns.
- Cheah SH, Sivanesaratnam V; Burns in pregnancy- maternal and foetal prognosis. Aust N.Z.J Obset Gynaecol 1989; 29:143-5.
- Ambade V.N, Godhole H V, Study of burn deaths in Nagpur; Central India, Burns 2006; 32: 902-8.
- Shah NA, Patel VJ, Patel CV, et al. Epidemiological study of burns patient with pregnancy. Indian Journal of Burns 2006; 14: 44-6.
- Prasanna M, Singh K. Early burn wound excision in major burns with pregnancy. A preliminary report. Burns 22; 234-7 1996.
- Mathew RN. Obstetric Implications of burns in pregnancy. But J Obsetet Gynaecol 1982; 89:603.
- Yiagbei Z, Yingjie, Xuwei. W. Burns injury during pregnancy :An analysis of 24 cases ; Burns 1981; 8: 286-9.
- Rayburn W, Smith B, Feller I, Varner M; Guikshank D major burns during pregnancy. Effect on foetal well being.
- Akhter MA, Mulawkar PM, Kulkarni HR. Burns in pregnancy effect on maternal and foetal outcomes. Burns 1999; 20:351-5.