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**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.582630>Available online at: <http://www.iajps.com>**Research Article****CROSS-SECTIONAL ANALYSIS OF RELATIONSHIP BETWEEN
DEVELOPMENT - PRESENTATION TIME DELAY AND MEAN
HOSPITAL STAY ASSOCIATED WITH PUERPERAL SEPSIS****Muhammad Iqbal Shah^{1*}, Suhail Ahmed Almani², Nasreen Noor³, Aatir H. Rajput⁴, Muhammad Muneeb⁵, Syed Jehangir⁶ and Zubair Suhail Almani⁷**^{1, 2, 3, 4, 5, 6 & 7}Liaquat University of Medical & Health Sciences, Jamshoro^{1, 2 & 3}Liaquat University Hospital, Hyderabad/Jamshoro⁵ Indus Medical College, Tando Muhammad Khan⁴Virtual University of Pakistan**Abstract:****Objective**

To study the relationship between development-presentation time delay and mean hospital stay among patients presenting with puerperal sepsis at department of medicine at Liaquat University Hospital.

Methodology

This retrospective analysis was held at department of medicine (unit – II) in a tertiary care hospital (Liaquat University Hospital, Hyderabad) from January 2016 to June 2016. The time delay between development of puerperal sepsis and presentation to the medical ward was recorded in patients reporting with puerperal sepsis. The past medical records of patients who fulfilled the inclusion criteria were also studied and all relevant data, as required in the pre-designed structured questionnaire, was obtained.

Results

During the study duration, 30 patients reported to the study setting with puerperal sepsis representing 0.46% of 6500 admissions in medical unit II. The mortality rate stood at nil and all returned healthy to their homes. 10% of the patients had gone through frequent vaginal examination, 66.7% of the patients were delivered at home, 90% of the patients presented with an altered level of consciousness.

Conclusion

The mean hospital stay stood at 5 days, while the length increased with increasing time delay. The relationship stood valid in all subjects.

Recommendations

Further research needs to be conducted on a larger sample space and more prolonged study duration while taking more variables, besides the time delay, into account.

Key words: Puerperal Sepsis, Hospital Stay and Time-delay

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INTRODUCTION:

Puerperal sepsis is a dangerous type of septicemia that occurs in women during labour and after delivery or miscarriage if they are exposed to septic conditions. In olden days the 1st documented epidemic of puerperal fever took place in 1646 in Paris. Deaths are reported consistently (20% to 25%) across Europe and America due to this menace of a disease. It was the sole common cause of mortality in mothers in the eighteenth and nineteenth centuries, resulting in about 50% of all mortalities pertaining to birthing and seconded only by tuberculosis in causing mortality in women during their child bearing years. [1]

Advent and spread of good aseptic techniques [2] such as effective hand sanitization, introduction of carbolic acid, and the bringing to light of the germ theory in eighteenth century lessened the maternal mortality from eighteen percent to three percent [3]. In the twentieth century, after the importance of antiseptic techniques were brought in the public eye, supplemented with introduction of fresher batches of antibiotics, mortality rate due to puerperal sepsis was lessened to a great extent [4]. The condition, however, remains largely the same in the developing world for nearly two centuries now.

Less than a decade ago, a report by the world health organization (WHO) declared puerperal sepsis to be responsible for the second largest number of deaths incurred to women of child bearing age in the developing world [5]. Since then, evidence has continually surfaced that puerperal sepsis is taking a huge toll on the lives of women of child bearing age even today [6 - 8]. This prompted us to study the

patients reporting to our study setting with puerperal sepsis to find out the hospital burden due to this disease and the mean hospital stay of the aforementioned patients.

MATERIAL AND METHODS:

This retrospective analysis was held at department of medicine (unit – II) in a tertiary care hospital (Liaquat University Hospital, Hyderabad) from January 2016 to June 2016. The time delay between development of puerperal sepsis and presentation to the medical ward was recorded in patients reporting with puerperal sepsis. The past medical records of patients who fulfilled the inclusion criteria were also studied and all relevant data, as required in the pre-designed structured questionnaire, was obtained. Data was analyzed using SPSS v. 16.0 and MS. Excel 2016.

Inclusion criteria: Patients reporting to the study setting with fever, abdominal distention, infected abdominal or episiotomy wound and foul smelling vaginal discharge either immediately after birthing /caesarian section, and miscarriage or within 42 days of these events were include in the study sample.

Exclusion criteria: Patients reporting to the study setting with fever during pregnancy, 42 days after birthing/caesarian section, miscarriage or patients presenting with fever due to other proven reasons were excluded from the study sample.

RESULTS:

During the study duration, 30 patients reported to the study setting with puerperal sepsis representing 0.46% of 6500 admissions in medical unit II.

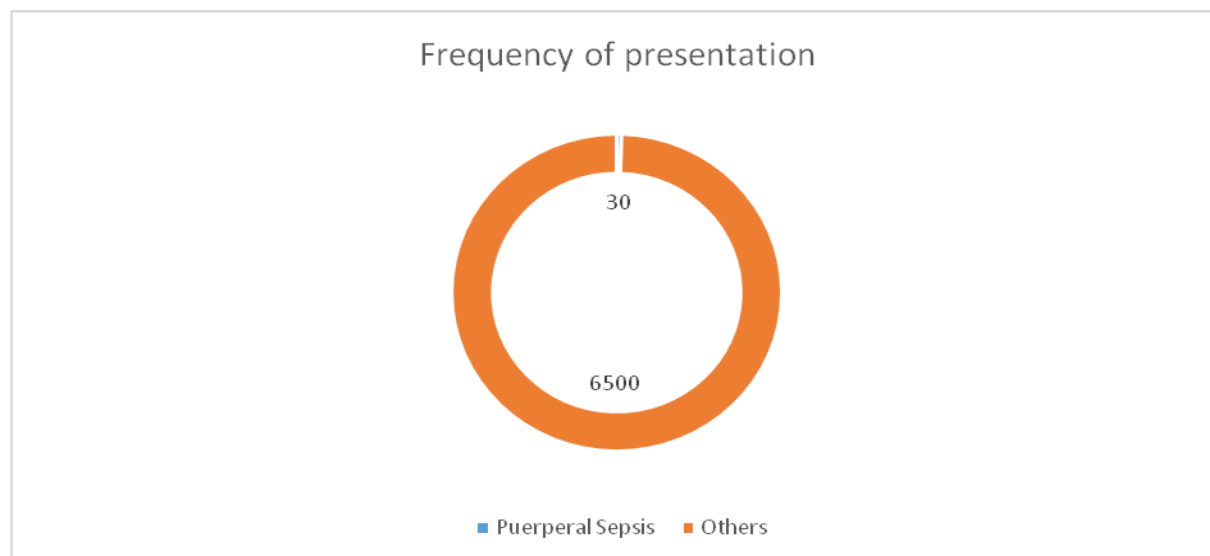


Fig 1: The low prevalence is due to the fact that our study setting was a medical ward and not an OBGYN ward.

The mortality rate stood at nill and all subjects returned healthy to their homes. 10% of the patients had gone through frequent vaginal examination, 66.7% of the patients were delivered at home.

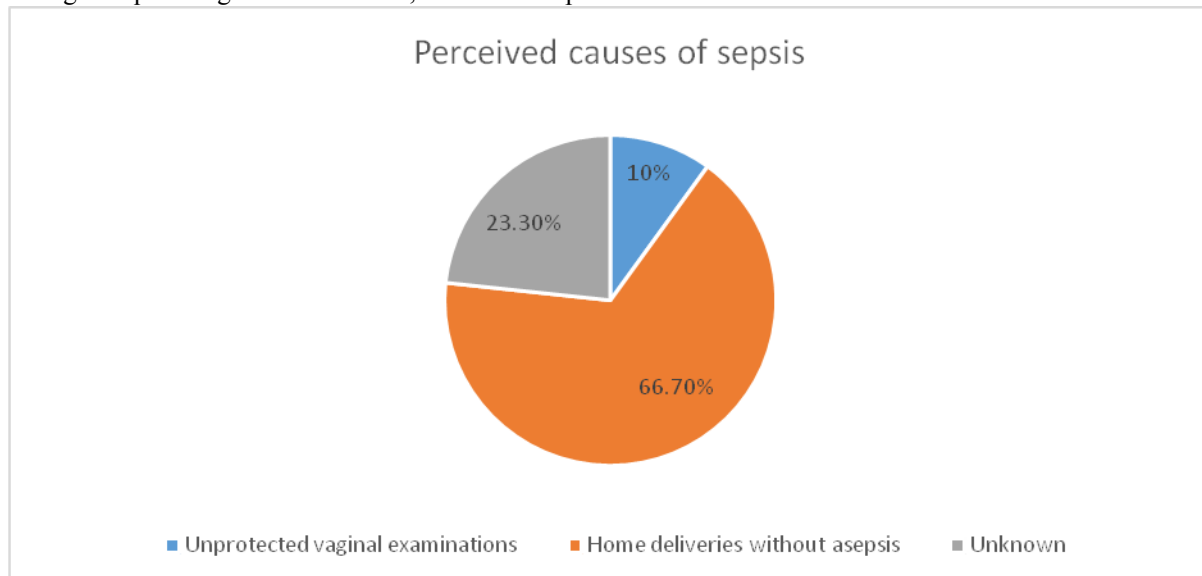


Fig 2: Home deliveries are still very common despite better and more cost effective health service availability.

90% of the patients presented with an altered level of consciousness. The mean hospital stay stood at 5 days, while the length increased with increasing time delay. The relationship stood valid in all subjects.

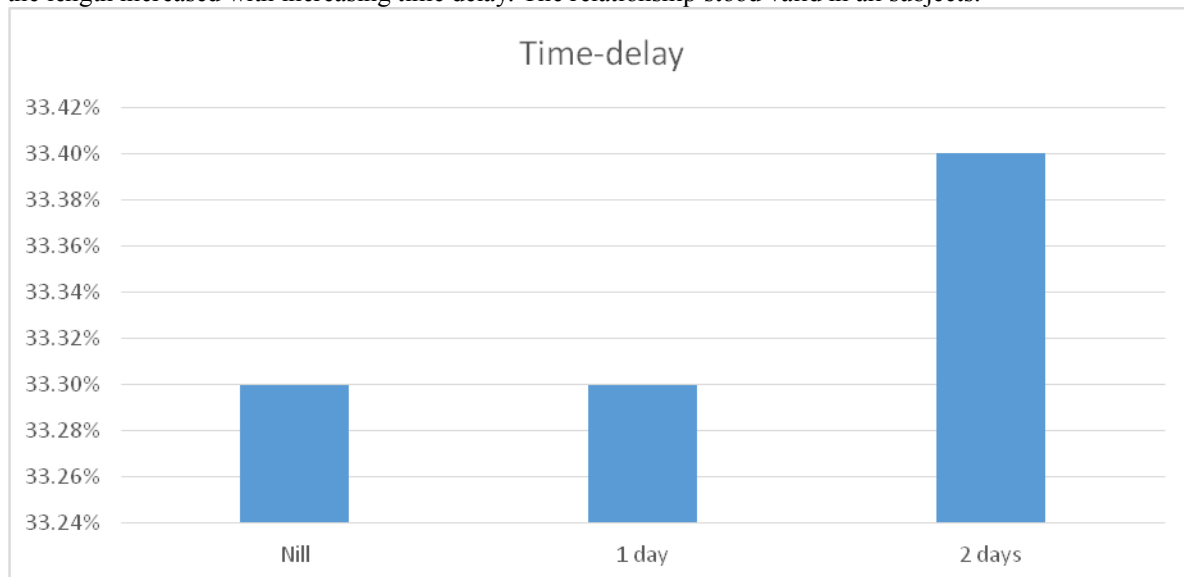


Fig 3: the mean hospital stay stood at five days.

Despite the abundance of confounding variables, the time delay stood as the variable that statistically effected the mean hospital stay the most.

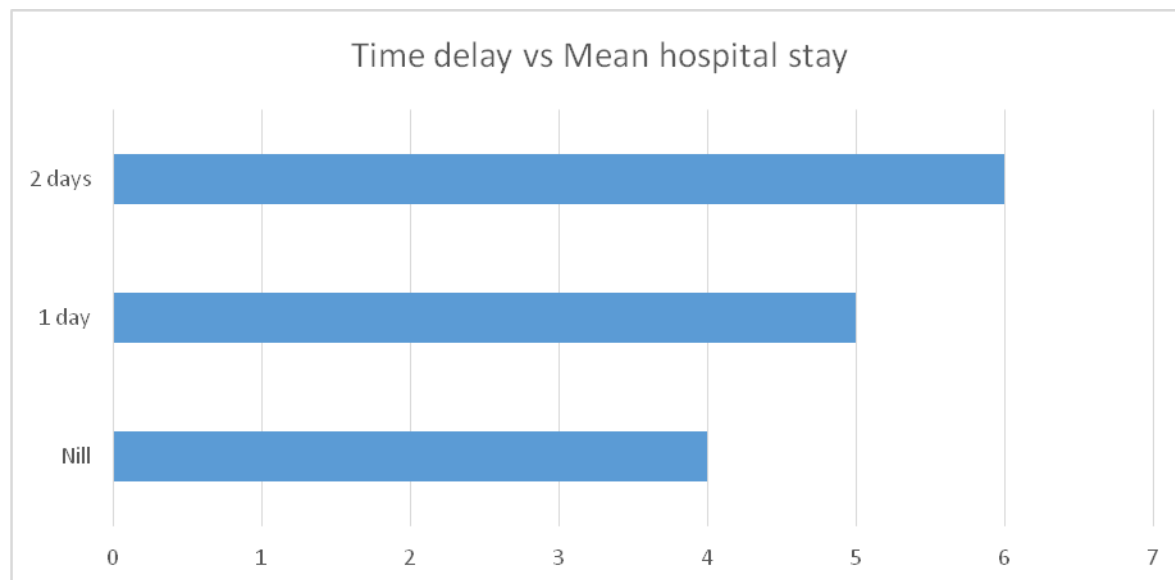


Fig 4: The relationship is almost linearly proportional and an increase in the time delay increased the mean hospital stay.

DISCUSSION:

Maternal mortality is an everyday phenomenon in the third world and things are not much better in the developing countries either. Death due to puerperal sepsis headline many list quoting the reasons behind mortality in many such parts of the world. Consequently, mortality due to puerperal sepsis, not only has been a harsh reality throughout history but today as well.

Advent of technique of asepsis and antibiotic in the eighteenth, nineteenth and twentieth century brought about a marked decrease in maternal mortality in the developed world [4]. As quoted earlier, in olden days, it had been top contributor to maternal deaths in Great Britain and other nations that were on the developing tracks back then. The advent of antibiotics however brought a significant decline in the cases being reported. Discrete investigations in maternal and child health, brought to light the fact that, there were no attributable death from 1982 to 1984 [9], which certainly was a remarkable feat. But sadly, conditions have not improved in the now developing world and maternal mortality due to puerperal sepsis is still widespread in Pakistan [10], India [11], South Africa [12], Niger [13] and Mali [14].

Although a bulk of the evidence available in the research literature pool comes from teaching hospitals (which are not the best representatives of a nation but our best guesses possible). In current study, the maternal mortality however stand at a nil and all patients received at the study setting were treated successfully while in other studies from the

same study setting over the past many years [6 - 8], have a two digit rate. Our results are significantly different to those produced by studies conducted at different study settings such as Abbottabad [15], Sukkur [16] Bahawalpur [17], Karachi [18] and Peshawar [19]. The difference in results may be owing to multiple factors such as late referral to hospital, unskilled deliveries at home in septic environments, prolong labor, low socioeconomic condition, induced miscarriage and anemia. In current study all these factors were present and although they cast effects on the mean hospital stay of the patient. The most marked effect on the mean hospital stay was cast by the time-delay of development of problem and arrival at the hospital.

Frequency of puerperal sepsis at our study setting is similar to the sites in Pakistan mentioned above but since our study setting was specifically the medical department and not the gynecology department, the mortality rate was totally different. One can argue that the difference may have been due to chance, the statistical tests and p value state otherwise. Such a difference however is not unexpected because, the results around the world too show wide variation because of different socioeconomic backgrounds, different approaches to quantify the problem and a variety of study designs.

CONCLUSION:

Puerperal sepsis is a treatable and preventable illness, and our zero mortality rates are a proud proof. The mean hospital stay and the hospital burden of the disease however can be lessened if the patients are

referred sooner and the development presentation time delay is kept to a minimum.

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