Original Article

Recurrent Abortions Treated with Heparin & Aspirin

Frequency of live Births in Patients with Unexplained Recurrent Abortions Treated with low Molecular Weight Heparin and Aspirin

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ABSTRACT

Objective: To determine the frequency of live birth in patients with unexplained recurrent abortions treated with low molecular weight heparin and aspirin.

Study Design: Descriptive study

Place and Duration of Study: This study was carried out at Department of Obstetrics & Gynaecology, Unit-III, Nishtar Medical College & Hospital, Multan from 01.01.2014 to 31.12.2014.

Materials and Methods: Sixty women with past history of two or more previous unexplained recurrent abortions who received low-molecular weight heparin (LMWH) and low dose aspirin (LDA) were included in the study and followed subsequently for the pregnancy outcome in the form of live birth measure.

Results: The age range between 20 to 40 years with mean 32.38±3.64 years. A total of sixty patients were studied with a 58.3% patients were belong to age group of 31-35 years. Previous abortion percentage was 36.7% with 2 abortions while 63.3% with 3 abortions with mean 2.63±0.49 abortions. Live birth was recorded in 51 out of 60 patients with percentage of 85%.

Conclusion: An enhancement in the live-birth rate was observed after low-molecular weight heparin (LMWH) and low dose aspirin (LDA) administration, in patient with 2 or more consecutive unexplained recurrent abortions.

Key Words: Low-molecular-weight heparin, Low dose aspirin, Recurrent abortions

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INTRODUCTION

Episodes of repeated abortions are affecting 1–5% of women of child bearing age and the causes of 68% of recurrent miscarriages are yet to be determined.[1] Without proper treatment, only small percentage of pregnancies results in live births.[2] Only few of such cases have identifiable cause either in the mother or fetus, but in most cases of recurrent abortions the cause remains obscure.[1] Successful outcome of a pregnancy depends on optimal utero-placental circulation, the hypercoagulable condition related with thrombophilia.[3-5] Concept behind the use of antithrombotic agents in the management of repeated abortions is that thrombophilia is considered as a potential cause of unexplained recurrent miscarriages because these agents may improve uteroplacental circulation by decreasing hypercoagulability associated with thrombophilia.[6-8]

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The pregnancy success rate with the use of antithrombotic therapy in women with heritable thrombophilia are not convencing.[9] Because two or more successive pregnancy losses are quite familiar and cause psychological trauma, and significant proportion of these patients have no identifiable cause moreover, there are no other effective management options. So. antithrombotic therapy is often given for these women, who have unexplained recurrent abortions with the hope to improve pregnancy outcome. Low-Molecular weight heparin (LMWH) and low dose aspirin (LDA) are generally considered safe for management of this condition.[10]

Low molecular weight heparin (Enoxaparin) has been found to have its beneficial effect on enhancing trophoblast implantation.[11] So it needs to be given at the time of implantation.[12] LMWH produce its antithrombotic effect by its blocking action on factor Xa.[13] It does not cross the blood placental barrier and has got no harmful effects on fetus.[14]

Aspirin is also increasingly used to reduce the risk of abortions and improve pregnancy outcome. Low dose aspirin, used as an antiplatelet agent, which is safe throughout pregnancy.[15] An important factor controlling tissue perfusion is the equilibrium between

thromboxane A2 and prostacyclin.[16] The daily administration of LDA induces a shift in the balance away from thromboxane A2 and towards prostacyclin, resulting into the vasodilatation and enhanced blood flow.[17] Results of recent studies are encouraging which have shown that low molecular weight heparin in combination with low dose aspirin have been found to be the most effective treatment for women of reproductive age with unexplained repeated abortions.[18,19,20]

MATERIALS AND METHODS

This descriptive case series study was conducted in Nishtar Hospital Multan, Gyane Unit III. Sixty women with a history of two or more consecutive unexplained recurrent abortions at any gestational age before 34 weeks were included in study. Patients with a history of thromboembolism, systemic lupus erythematosis, uterine abnormalities, and multiple successful pregnancies were excluded from study. The women captivating low-dose aspirin (75 mg daily) quickly as they had a positive result on a pregnancy test and low molecular weight heparin (enoxaparin) 40 mg subcutaneous daily at start of fetal cardiac activity observed by ultrasound at 6th weeks of gestation; aspirin was discontinued at 36 weeks' gestation, and heparin at 24 hours before delivery. Follow-up of the patients was done through OPD and the antenatal care clinic and all participants received routine iron and folic acid supplements. Participants were closely monitored until delivery. The outcome of all pregnancies in terms of live birth was recorded. The data was analysed using SPSS. Frequency and percentage was computed for live birth. Mean±SD was presented for quantitative variables like age and number of previous abortions. Chi-square test was performed on categorical variables. A p value of <0.05 was accepted as statistically significant.

RESULTS

The age range between 20 to 40 years with mean 32.38±3.64 years was noted. 58.3% patients were belonged to age group of 31-35 years (Table 1). Previous abortion percentage was 36.7% with 2 abortions while 63.3% with 3 abortions with Mean±SD of 2.63±0.49 abortions as shown in (Table 2).

Table No.1: Percentage of patients according to age

Age (years)	No.	%
20-25	4	6.7
26-30	16	26.7
31-35	35	58.3
36-40	5	8.3

Live birth was recorded in 51 out of 60 patients with percentage of 85% as shown in (Table 3) Association of age groups with live birth is shown in Table 4 with p value of 0.502. Association of no. of previous abortions with live birth is shown in Table 5 with p value of 0.599.

Table No.2: Percentage of patients according to number of previous miscarriages

No. of Previous Miscarriages	No.	%
2	22	36.7
>3	38	63.3

Table No.3: Percentage of patients with outcome (live birth

Live Birth	No.	%
Yes	51	85.0
No	9	15.0

Table No.4: Association of age groups with live birth

Age (years)	Live birth	
	Yes	No
20-25	4 (100%)	-
26-30	14 (87.5%)	2 (12.5%)
31-35	28 (80%)	7 (20%)
36-40	5 (100%)	-
Total	51 (85%)	9 (15%)

p-value=0.502

Table No.5: Association of number of previous miscarriages with live birth

No. of miscarriage	Live birth	
	Yes	No
2	18(81.8%)	4(18.2%)
≥3	33(86.8%)	5(13.2%)
Total	51 (85%)	9 (15%)

p-value=0.599

DISCUSSION

Treatment with a combination of LDA and LMWH leads to improvement in outcome of pregnancies in terms of a significantly increasing the rate of live births in pregnant women with a history of unexplained recurrent miscarriages. Our findings are comparable with other studies in literature.[21,22] Another recent study also concluded that the use of LMWH is a safe and reliable treatment resulting in a high live birth rate.[23]

However, other measures in our study, such as strict adherence to a follow-up policy for all these patients, might have improved our results because of timely diagnoses and management of antenatal problems.[24]

The results of the present study are also similar with a study by Brenner *et al*[25], that used aspirin 75 mg daily and Inj. Enoxaparin 40–80 mg subcutaneously once daily. The study included patients of recurrent pregnancy loss, live birth rate achieved was 86%. In another study conducted at department of obstetrics and gynaecology, University of Sheffield, England. Enoxaparin was used in subcutaneously dose with 80% live birth rate.[26]

More over Degiannidis *et al* found that low-molecular-

weight heparin and low-dose aspirin daily during pregnancy appear to have a favorable effect on pregnancy outcome in shape of live birth.[27]

LDA and LMWH in combination improve pregnancy outcome by irreversibly blocking the action of cyclo-oxygenase in platelets, therefore inhibiting platelet thromboxane synthesis and preventing thrombosis of the placental vasculature and promoting successful implantation in early pregnancy respectively.[28,29]

CONCLUSION

Low-molecular weight heparin (LMWH) and low dose aspirin (LDA) resulted in a improved live-birth rate in patient with 2 or more consecutive unexplained recurrent abortions.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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