

Original Articles

Reproductive Biology Section

Intravenous intralipid therapy is not beneficial in having a live delivery in women aged 40-42 years with a previous history of miscarriage or failure to conceive despite embryo transfer undergoing in vitro fertilization-embryo transfer

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Summary

Purpose: To evaluate the efficacy of intralipid intravenous infusion in achieving a live pregnancy following IVF – embryo transfer in women of advanced reproductive age (40-42 years). **Materials and Methods:** A matched control was performed. Women aged 40-42 with a previous history of miscarriage or who failed to conceive despite previous embryo transfer who entered an IVF program were offered intravenous intralipid therapy (four ml of 20% liposyn II in 100 ml normal saline over one hour) during the mid-follicular phase. Clinical pregnancy rates (eight weeks with viable gestation) and live delivered pregnancy rates were then determined and compared. **Results:** The results were evaluated after ten matched cycles. There were no clinical pregnancies in those receiving intralipid vs. a 40% clinical and a 30% live delivered pregnancy rate in the untreated controls ($p = 0.087$, Fisher's exact test). The study was terminated because of these preliminary data. **Conclusions:** In the test tube, adding intralipid to natural killer cells can inhibit their cytolytic action. However, the use of intravenous intralipid to suppress natural killer cell activity does not seem to improve the chance of a live delivery in women aged 40-42 years with a previous history of miscarriage. In fact this therapy may actually be detrimental in this age group. Since efficacy of this therapy was not found in a group of advanced reproductive age, it is not clear why this should be effective for a younger population. A controlled study for the younger group is needed. Perhaps such a study could be limited to only those with miscarriage rather than also concluding failure to conceive despite embryo transfer. Intralipid failed to improve live delivered pregnancy rates in women with prior miscarriage or previous failure with embryo transfer.

Key words: Recurrent miscarriage; In vitro fertilization; Intralipid; Advanced reproductive age.

Introduction

Based on preventing abortion in some murine experiments in 1994, Clark suggested that the treatment related to its lack of side effects and low cost could be considered for treatment in humans with recurrent miscarriage [1]. Clark stated that “for adequate statistical power, this would require a large multicenter, prognostically stratified randomized controlled trial (RCT) and suggested that this could be accomplished via the Recurrent Miscarriage Immunotherapy Trialists Group Network” [1]. Twenty years later no such RCT has been performed. Some studies especially by Roussev *et al.* have found that intralipid may suppress in vitro natural killer (NK) cell activity [2, 3].

Most small studies were performed by Coulam and Acaio who stated that intralipid treatment seems to be equally effective to the much more expensive intravenous immunoglobulin (IVIG) therapy [4]. However recently a multicenter cooperative RCT evaluates IVIG for recurrent miscarriage organized by Stephenson *et al.* questioned the efficacy of IVIG [5].

The objective of this present study was to evaluate whether infusion of IVIG to a group of women of more advanced reproductive age (40-42 years) with a history of failure to conceive with embryo transfer or miscarriage.

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Materials and Methods

A matched control was performed. Women aged 40-42 years with a previous history of miscarriage or who failed to conceive despite previous embryo transfer who entered an IVF program were offered intravenous intralipid therapy (four ml of 20% liposyn II in 100 ml normal saline over one hour) during the mid-follicular phase. Clinical pregnancy rates (eight weeks with viable gestation) and live delivered pregnancy rates were then determined and compared.

Results

The results were evaluated after ten matched cycles. There were no clinical pregnancies in those receiving intralipid vs. a 40% clinical and a 30% live delivered pregnancy rate in the untreated controls ($p = 0.087$, Fisher's exact test). The study was terminated because of these preliminary data.

Discussion

Since efficacy of this therapy was not found in a group of advanced reproductive age it is not clear why this should be effective for a younger population. A controlled study for the younger group is needed. Perhaps such a study could be limited to only those with miscarriage rather than also concluding failure to conceive despite embryo transfer.

The title of an article written by Shreeve and Sadek nicely summarizes the present knowledge of intralipid therapy "Intralipid therapy for recurrent implantation failure:

new hope or false dawn" [6]. Seventeen years after the 1994 article by Clark [1], these authors state "we have concluded that appropriately controlled, large-scale confirmatory studies are necessary to prove the efficacy of intralipid before it can be recommended for routine use" [6].

References

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