Case report: the use of annexin V coupled with magnetic activated cell sorting in cryopreserved spermatozoa from a male cancer survivor: healthy twin newborns after two previous ICSI failures

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Abstract
Purpose The aim of the study is to report successful outcome (live births) after sperm sorting with annexin V-MACS on cryopreserved spermatozoa with high level of sperm DNA fragmentation from a cancer patient survivor.
Methods Cryopreserved spermatozoa were sorted with annexin V-MACS prior to ICSI. Sperm DNA fragmentation was evaluated by SCSA™ and TUNEL.
Results The couple had two previous IVF/ICSI cycles failure using sperm cryopreserved before cancer treatment. On third ICSI cycle attempt results were as follow: pre-annexin V-MACS sperm quality: 10×10⁶/ml, 3.3 % progressive motility, 1 % normal forms, TUNEL: 72.5 % positive cells, SCSA™: 76.6 % DFI. Post-annexin V-MACS sperm quality: 2.8×10⁶/ml, 10 % progressive motility, TUNEL: 58.8 % positive cells. Eight metaphase II oocytes were collected, 4 fertilized, 2 embryos were transferred on day 3 and healthy twins were born (1 boy, 1 girl).

Conclusions Annexin V-MACS technique could be a potential tool to improve sperm quality on cryopreserved spermatozoa of cancer patient and improve ICSI outcome.

Keywords Cancer survivor • Cryopreserved sperm • Annexin V-MACS

Introduction

With the advances in cancer therapy particularly with combinations chemotherapy regimens, survival rates from many common cancers affecting men at reproductive age such as testis cancer, Hodgkin’s and non-Hodgkin’s lymphoma have improved significantly [21]. Since cytotoxic anti-cancer therapies for these malignancies can affect male reproductive health, an important step in oncology counselling for young men with newly diagnosed cancer is sperm cryopreservation. Cryopreserved