

# 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<sup>®</sup> and TUNEL.

**Results** The couple had two previous IVF/ICSI cycles failures using sperm cryopreserved before cancer treatment. On third ICSI cycle attempt results were as follow: pre-annexin V-MACS sperm quality:  $10 \times 10^6$ /ml, 3.3 % progressive motility, 1 % normal forms, TUNEL: 72.5 % positive cells, SCSA<sup>®</sup>: 76.6 % DFI. Post-annexin V-MACS sperm quality:  $2.8 \times 10^6$ /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 combination 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 oncofertility counselling for young men with newly diagnosed cancer is sperm cryopreservation. Cryopreserved