


# Do assisted reproduction outcomes differ according to aetiology of obstructive azoospermia?

Leonardo Seligra Lopes<sup>1,2</sup>  | Victor Notari Cury<sup>1</sup> | Jonathan Doyan Cha<sup>1</sup> |  
Valdir Martins Lampa Junior<sup>1,2</sup> | Jaqueline Leite Marques<sup>3</sup> | Françoise Elia Mizrahi<sup>3</sup> |  
Francisco Winter dos Santos Figueiredo<sup>4</sup> | Caio Parente Barbosa<sup>2,5</sup> | Sidney Glina<sup>1,3</sup>

<sup>1</sup>Department of Urology, Faculdade de Medicina do ABC, Santo André, Brazil

<sup>2</sup>Instituto Idéia Fértil de Saúde Reprodutiva, Santo André, Brazil

<sup>3</sup>Projeto Alfa, São Paulo, Brazil

<sup>4</sup>Epidemiology Lab, Faculdade de Medicina do ABC, Santo André, Brazil

<sup>5</sup>Department of Sexual and Reproductive Health and Population Genetics, Faculdade de Medicina do ABC, Santo André, Brazil

## Correspondence

Leonardo Seligra Lopes, Av Lauro Gomes, 2000 - Santo André, SP 09051-040, Brazil.  
Email: dr.leonardoseligralopes@yahoo.com.br

## Abstract

Azoospermia is defined as absence of spermatozoa and may be secondary to blocked seminal ducts, known as obstructive azoospermia. Semen quality may be impaired due to factors such as sperm cell DNA fragmentation and presence of antisperm antibodies. The objective of this article was to investigate potential differences in outcomes of in vitro fertilisation and intracytoplasmic sperm injection between groups with different obstruction aetiology, as well as between the use of different techniques and sperm cells of different origins. Retrospective, multi-centre analysis of 621 first cycles was carried out between 2008 and 2015: Group I, congenital obstruction, 45 patients and Group 2, vasectomy, 576 patients. Sperm cell retrieval was achieved in all cases. Results were similar for Group I and II fertilisation rates, 70% versus 66.85% ( $p = .786$ ); pregnancy rates, 42.5% versus 41.46% ( $p = .896$ ); and live birth rates, 29.73% versus 17.69% ( $p = .071$ ). According to sperm cell origin (579 epididymal vs. 42 testicular), pregnancy rates, 41.47% versus 43.9% ( $p = .760$ ); and live birth rates, 18.3% versus 27.78% ( $p = .163$ ) had no difference. Fertilisation, pregnancy and live birth rates did not differ according to obstruction aetiology. Outcomes did not differ between groups according to sperm cell origin.

## KEYWORDS

azoospermia, reproductive techniques, sperm retrieval, vas deferens/anomalies, vasectomy

## 1 | INTRODUCTION

Azoospermia is defined as complete absence of spermatozoa from at least two centrifuged semen samples (Practice Committee of the American Society for Reproductive Medicine in collaboration with the Society for Male Reproduction & Urology, 2018). The condition affects approximately 1% of population and 15% of infertile patients (Practice Committee of the American Society for Reproductive Medicine in collaboration with the Society for Male Reproduction & Urology, 2018; Wosnitzer & Goldstein, 2014) and is called obstructive azoospermia (OA) if secondary to blocked seminal ducts.

Obstructive azoospermia accounts for up to 40% of cases of azoospermia and may be acquired or congenital in nature (Wosnitzer & Goldstein, 2014). Most cases of acquired AO result from vasectomy (Wosnitzer & Goldstein, 2014), whereas congenital OA is mostly due to congenital bilateral absence of the vas deferens (CBAVD; de Souza, Faucz, Pereira-Ferrari, Sotomaior, & Raskin, 2018; Wosnitzer & Goldstein, 2014) associated with mutations in the cystic fibrosis transmembrane regulator (*CFTR*) gene (de Souza et al., 2018; Stuhmann & Dork, 2000).

Patients suffering from OA have normal testicular volume and serum sex hormone levels (Practice Committee of the American