Rev Int Androl. 2014;12(4):123–131

Revista Internacional de Andrología

www.elsevier.es/andrologia

ORIGINAL

Epidemiologic study of infertility: Report of the hospital centre of St. John, Porto

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Received 17 February 2014; accepted 2 April 2014
Available online 10 July 2014

KEYWORDS
Epidemiology;
Infertility;
Assisted reproductive medicine

Abstract
Introduction: There are no epidemiological studies of Portuguese Public Hospitals in relation to infertility and its treatments.
Objectives: We characterized the infertile couple of a northern region of Portugal that uses a Public Hospital.
Materials and methods: A retrospective, epidemiological, observational and descriptive study was performed of couples attending infertile consultations at the Hospital Centre of St. John, Porto. A data-base was constructed and analyzed for the period 2005–2011.
Results: Of the 1660 couples, 69% belonged to the district of Porto. The majority of the women were under 35 years of age (55%), were well-educated (74%), were eutrophic (55%), did not smoke (83%), presented high levels of alcohol consumption (56%) and primary infertility (74%), and the male factor was the main cause of infertility (44%). Of the 2245 treatment cycles performed, 60% were by intracytoplasmic sperm injection (ICSI): 21% by in vitro fertilization, 9% by preimplantation genetic diagnosis, 9% by intra-uterine insemination and 1% by ovulation induction. The clinical pregnancy rates were similar to the European means (30%, 37%, 16%, 18% and 39%, respectively).
Conclusions: The age of the ovary, smoking and obesity were not determinant factors of the infertility status. On the contrary, it is mandatory to increase the knowledge regarding the toxic effects of alcohol drinking. Primary infertility and male factor predominated, and as consequence the ICSI technique was the most used.

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http://dx.doi.org/10.1016/j.androl.2014.04.008

PALABRAS CLAVE
Epidemiología;
Infertilidad;
Reproducción asistida

Estudo epidemiológico da infertilidade: experiência do Centro Hospitalar de S. João, Porto

Resumen
Introducción: No existen estudios epidemiológicos de los hospitales públicos de Portugal en relación con la infertilidad y sus tratamientos.
Objetivos: Caracterizar las parejas infértiles en una determinada región del Norte de Portugal que acude a un Hospital Público.
Métodos: Se realizó un estudio epidemiológico retrospectivo, observacional y descriptivo de las parejas que acudieron a la consulta de infertilidad en el Hospital de S. João, Porto entre 2005-2011, después de crearse una base de datos para este fin.
Resultados: De las 1.660 parejas, el 69% pertenecían al distrito de Oporto. La mayoría tenía menos de 35 años (55%), un buen nivel de educación (74%), peso normal (55%), la ausencia de tabaquismo (83%), mayor consumo de alcohol (56%), la infertilidad primaria (74%) y factor masculino como la principal causa de infertilidad (44%). De 2.245 ciclos de tratamiento realizados, el 60% fueron por microinyección intracitoplasmática de espermatozoides (ICSI), el 21% por fertilización in vitro, el 9% por diagnóstico genético de pre-implantación, el 9% por inseminación intrauterina y el 1% por inducción de ovulación. Las tasas de embarazo clínico fueron similares a la media europea (30%, 37%, 16%, 18% y 39%, respectivamente).
Conclusión: Se observó que la edad del ovario, el consumo de tabaco y la obesidad no eran factores relevantes en la infertilidad. Por el contrario, los resultados evidencian la necesidad de una mayor concienciación de los efectos nocivos del consumo de alcohol. Predominaron la infertilidad primaria y el factor masculino por lo que en consecuencia el ICSI fue el método de tratamiento más utilizado.

Introduction

Infertility is a disease of prominent importance in the actual western world and is defined as ''a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse''[1] but it also includes women with inability to carry a pregnancy to childbirth. In the western world, the mean prevalence of infertility was estimated as 9% (3.5–16.7%) of the couples,[2] and in Portugal to about 9–10%.[3] Also in Portugal, only 43–48% of infertile women resort to medical consultations, 25% perform treatment cycles and 31% ignore the cause of their problem.[3] Infertility may be primary if the woman never had a full term pregnancy or secondary when the woman had one or more previous pregnancies.[4,5] It is supposed that infertility has not increased in the last decades but that infertility has gained much more public information and the availability of new techniques improved diagnosis. Additionally, nowadays couples decide more often to postpone their decision to conceive due to professional and economic reasons and this is associated with ovarian and testicle aging and more time of exposure to stress and social and ambient toxics.[4,5]

In our current society numerous ambiental, professional and habits have a strong impact on fertility. In this setting, one of the most important factors is aging of the reproductive tract, which is associated with lower fecundity rates and adverse reproductive outcomes; this includes the ovary, as after 35 years there is a significant decrease in oocyte number and quality,[6–8] and the testes, as after 40 years there is a significant decrease in semen parameters.[9,10] Infections of the male[11] and female[12] tracts are also, still today, an important component of infertility. Another cause of infertility is dependent on environmental and occupational toxics that may compromise the male[13–16] and female[17,18] reproductive functions.

Another critical aspect in our society today is the problem with western food intake and the associated obesity, with increased body mass index being associated with both female[19,20] and male[16,21–23] infertility. Alcohol abuse,[16,24–26] cigarette smoking,[16,27] drug addiction,[16] high intensity exercise[16] and medicines[16] are also associated with lower fecundity rates and adverse reproductive outcomes. Finally, personality traits associated with depressive and anxiety disorders may also compromise female and male fertility.[16,28]

The objective of the present report was to characterize the infertile couple from the northeast Portuguese region that had infertility consultations at the Unit of Reproductive Medicine of the Hospital Centre of St. John, Porto, during the period 2005–2011.

Materials and methods

A patient database was developed for cases that had infertility consultations and treatments at the Unit of Reproductive Medicine of the Hospital Centre of St. John, Porto, Portugal.