Infertile Men Have Higher Risk of Heart Disease, Osteoporosis

By Lila Abassi — March 16, 2016

It has been established that in older men with low testosterone levels, there's an increased association with cardiovascular disease, osteoporosis and metabolic syndrome (a spectrum of disease which includes insulin resistance, Type 2 diabetes, heart disease and elevated cholesterol).

In a study [1] recently published in the journal Clinical Endocrinology and presented at the European Association of Urology, Swedish researchers found that in a sample of infertile men, one-third of those under age 50 years had:

- concomitantly low levels of sex hormones (aka hypogonadism)
- low bone density (meaning increased risk of fractures and osteoporosis)
- elevated levels of glycated hemoglobin (HbA1c — a measure of blood glucose levels over a three-month period)
- greater insulin resistance

This investigation was a cross-sectional, case-control study that included 192 men from infertile couples between the ages of 18 and 50-years old. Their serum levels of sex hormones, lipids (cholesterol and triglycerides), glucose, insulin and HbA1c were measured as well as their bone mineral density. The results revealed that compared to controls, the risk of hypogonadism (low levels of sex hormones) was increased among men with infertility and these men had higher HbA1c levels and lower bone mineral density (BMD) measurements of the lower lumbar spine.

“We found that a significant proportion of men from infertile couples show biochemical signs of hypogonadism. This may be affecting their fertility, but they can also serve as early warning signs for metabolic diseases in later life, such as osteoporosis or diabetes,” stated the senior author of the study, Dr. Aleksander Giwercman [2], Skane University Hospital, and Lund University, Malmo Sweden.

“We would recommend that levels of reproductive hormones should be checked in all men seeking advice for fertility problems,” he added. "Those at risk of serious disease should be followed after
the completion of fertility treatment."

The authors conclude that infertile men have 10-fold increased odds that they will have hypogonadism which is associated with elevated blood glucose levels and lower BMD. The authors explain that the underlying mechanism as to how a deficiency of male sex hormones are associated with metabolic disturbances and osteoporosis is poorly understood.

There has been evidence showing that men with impaired semen quality tend to have decreased life expectancy, for which the causes are not known, and thus far there are no strategies available to prevent this. Men struggling with infertility due to issues with the quality of their sperm also have low testosterone levels, which may explain the increased mortality rates.

What this study does do is help identify these men (younger than age 50) and refer them for endocrinological assessment and evaluate them for osteoporosis given their increased risk for disease. Preventive measures could be utilized to improve metabolic and bone health.