

**Abstracts of the Third European Congress of Andrology and  
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	M. E. Beutel <sup>1</sup> , W. Weidner <sup>2</sup> and E. Brähler <sup>3</sup>	
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	While age-related complaints of women have been subject to long-standing interest particularly in relation to HRT, age-associated complaints of men have only recently found clinical and scientific	

**PO141 Alterations of spermatogenetic parameters in HCV infection before and during antiviral treatment**

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Hepatitis C virus (HCV) may induce extra-hepatic, mostly immuno-mediated, manifestations. It is unclear if HCV infection itself can affect spermatogenesis and, thus, hormonal and seminal parameters. The aim of our study was to evaluate seminal parameters and reproductive hormones in young subjects with chronic HCV infection before and during antiviral treatment. We studied 10 male patients aged  $35.0 \pm 2.2$  years (mean  $\pm$  SD) with chronic hepatitis C before and after 6 months of peg-interferon and ribavirine treatment. HCV RNA genotype was assessed in all cases. Active viral replication and increased transaminases were present in all patients. Serum inhibin B, FSH, LH, total and free testosterone, estradiol, prolactin levels, sperm concentration, progressive motility and normal morphology were assessed. We studied the same hormonal and seminal parameters in 16 healthy male controls aged  $32.0 \pm 7.0$  years. Before antiviral treatment, sperm concentration was not statistically different between patients and controls; on the other hand, progressive motility and normal morphology were reduced in patients ( $45.7 \pm 8.8$  versus  $60.4 \pm 6.9\%$ ,  $P < 0.001$ ;  $28.0 \pm 9.7$  versus  $42.0 \pm 6.7\%$ ,  $P < 0.001$ ). Inhibin B was also lower in patients than in controls too ( $101.7 \pm 47.0$  versus  $192.8 \pm 77.0$  pg ml<sup>-1</sup>,  $P < 0.01$ ). The other hormonal parameters were in the normal range in all patients without significant differences between the two groups. After 6-month treatment, sperm concentration and progressive motility was unchanged, but there was a remarkable reduction of normal morphology ( $28.0 \pm 9.7$  versus  $19.5 \pm 11.1\%$ ,  $P < 0.05$ ) in all patients. On the contrary, inhibin B levels were increased in 90% of patients ( $101.7 \pm 47.0$  versus  $161.9 \pm 52.8$  pg ml<sup>-1</sup>,  $P < 0.01$ ). In conclusion, HCV-infected patients show sperm abnormalities, in particular alterations of progressive motility and morphology. The treatment could cause a worsening of morphology. However, inhibin B levels normalization seems to suggest a prospective spermatogenesis improvement.

**PO142 Artificial neural networks in azoospermia: a comparison to clinical diagnosis**

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**Objective.** Significant research on artificial neural networks (ANN) in medicine has been reported so far. Although the initial enthusiasm was followed by scepticism, current advances raise expectations for their use in decision making. As there are no applications of ANN in the field of andrology, we present an ANN application in the field of azoospermia.

**Material and methods.** A cohort of azoospermic men ( $n = 147$ ) was investigated through history, clinical examination, sperm and basal hormonal levels. Based on these parameters, two classifications were made: (1) one with two major subgroups – (a) obstructive azoospermia ( $n = 63$ ) and (b) nonobstructive azoospermia ( $n = 84$ ) and (2) one with four major subgroups – (a) obstructive azoospermia ( $n = 63$ ), (b) nonobstructive azoospermia ( $n = 71$ ), (c) hypergonadotropic hypogonadism ( $n = 2$ ) and (d) hypogonadotropic hypogonadism ( $n = 11$ ). An ANN was constructed having as input values of eight variables (primary or secondary subfertility, positive history of andrological disease, clinical presence of varicocele, testicular volume, sperm volume, FSH, LH, total testosterone). This ANN was a two hidden layer multilayer perceptron, trained with static backpropagation algorithm, which consisted of one input layer with eight inputs, a first hidden layer with five neurons, a second hidden layer with four neurons and an output layer with one output, leading to a total of 64 connections.

**Results.** The ANN used 124 cases in order to be trained whereas the remaining 23 cases were used for its evaluation. A correct diagnosis was achieved in 90% of cases according to the two-subgroup classification; this percentage was only 60% according to the four-subgroup classification.

**Conclusions.** Given the present software properties, there is no total agreement between ANN and clinical diagnosis. It is believed that the development of advanced software and its proper use on large datasets will greatly contribute in clinical as well as educational aspects of andrology.