



## Parameters of ovarian reserve in patients with chronic kidney disease stages 3-4.

Iwona Szydłowska, Aleksandra Marciniak, Agnieszka Brodowska, Marcin Lisak, Sylwia Przysiecka, Jacek Róžański

**THE AIM OF THE STUDY** was to assess the parameters of ovarian reserve in patients with CKD stage 3 to 4.

### MATERIALS AND METHODS:

The examination included 24 patients ages 23 to 45, all with chronic kidney disease stages 3-4. Control group included 28 patients ages 28 to 42 with regular menstrual cycles and without chronic diseases in medical history.

The examined parameters of ovarian reserve included: transvaginal ultrasonography (to assess AFC and ovarian volume), serum AMH, FSH and E<sub>2</sub> assessed in early follicular phase of menstrual cycle.

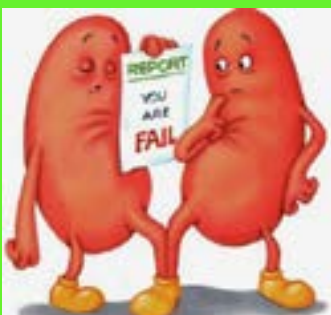
All patients included to the study had been diagnosed with CKD (kidney damage or dysfunction) and had decreased GFR- below 60 ml/min/1.73 m<sup>2</sup> for at least 3 months:

- moderate reduction in GFR (30–59 ml/min/1.73 m<sup>2</sup>)- stage 3 of CKD,
- severe reduction in GFR (15–29 ml/min/1.73 m<sup>2</sup>)- stage 4 of CKD.

### RESULTS:

Parameters of ovarian reserve: ovarian volume, AFC, AMH, FSH; estradiol (E<sub>2</sub>) in patients with or without chronic kidney disease (CKD)

Parameter of ovarian reserve		Study group (CKD)			Control group (without CKD)			P
		x ± SD	M <sub>e</sub>	min– max	x ± SD	M <sub>e</sub>	min– max	
Ovarian volume	Right ovary (cm <sup>3</sup> )	3.63±1.8	3.31	1.64-9.7	3.12±0.75	3.10	2.30-5.30	0.393
	Left ovary (cm <sup>3</sup> )	3.79±2.72	2.73	1.17-13.3	3.12±0.60	3.20	1.90-4.60	0.861
Antral follicle count (AFC)	Right ovary (n)	3.96±1.46	3.5	2.00-7.00	5.82±1.36	6.00	3.00-8.00	<0.001
	Left ovary (n)	3.67±1.46	4.00	1.00-7.00	5.82±1.56	6.00	2.00-9.00	<0.001
AMH (ng/mL)		1.24±0.66	1.08	0.02-2.79	3.90±2.78	3.58	0.35-10.32	<0.001
FSH (IU/L)		8.18±3.40	7.56	3.63-18.70	7.24±2.67	7.00	2.70-15.70	0.240
E <sub>2</sub> (pg/mL)		104.85±95.09	75.75	7.53-461.70	59.65±52.66	37.00	22.02-211.70	0.002



### CONCLUSIONS:

1. The most sensitive parameters of ovarian reserve are AMH and AFC.
2. On the base of the most sensitive parameters of ovarian reserve (AMH and AFC) reproductive potential is lower in patients with chronic kidney disease stages 3-4 in comparison to women without chronic diseases.
3. AMH and AFC parameters as the most sensitive parameters allow to predict problems with fertility in group of patients with CKD in the nearest future.