

### Cycles monitoring and hCG administration

T.Tomažević

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### By triggering ovulation with hCG instead waiting for natural LH surge

- Paulson and co., Foulot and co. 1989
- Confirmed, that IVF/ET can be successful in unstimulated cycle

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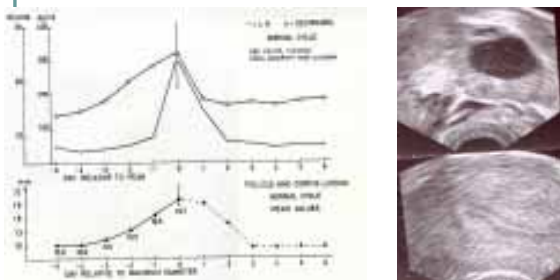
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### Correlating hormonal and ultrasonic measurements were used for monitoring follicle growth in natural cycle



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**Relatively high minimal criteria were used for triggering ovulation in natural cycle**

- **Minimal E2 criteria:**
- E2 >0.6, >0.7 nmol/l
- **Minimal US criteria:**
- Diameter of dominant follicle : > 18, >20 mm
- **High cancellation rate ; 1199 cycles from 20 reports**  
29 % ( 15-62% )

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**Our way of individualized monitoring to avoid cancellation of cycles with LH surge at very low estradiol levels**

- HCG is given at the meeting point of three criteria:
- E<sub>2</sub>,
- follicle Φ,
- cycle length
- Lower minimal follicle diameter = 17 mm ,
- Lower minimal E<sub>2</sub> = 0,4 nmol/l
- The cycle length : Cycle length minus 17-18 days
- Urinary LH negative
- HCG is given 32 hours before puncture

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**When E<sub>2</sub> reaches 0.4 nmol/l one follicle gained dominance by a physiological process .**  
**At this point we start VUS monitoring**

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
E <sub>2</sub>								√	√	√	√	√		
VUS when E <sub>2</sub> > 0,4 nmol/l											√	√		
Urinary LH negative											√	√		

Follicle diameter 16 -22 mm  
E<sub>2</sub>: 0,4 -1,25 nmol/L  
Cycle lengths minus 17-18 days  
Puncture 32 hours later

Live birth / cyle was 13 % in 286 cycles in women <39 years of age

• Tomazevic T. et al. *Acc. gestational and blastocysts can predict success in natural cycle IVF-embryo transfer.* *Reprod Biomed Online.* 2007 Aug;15(2):220-6

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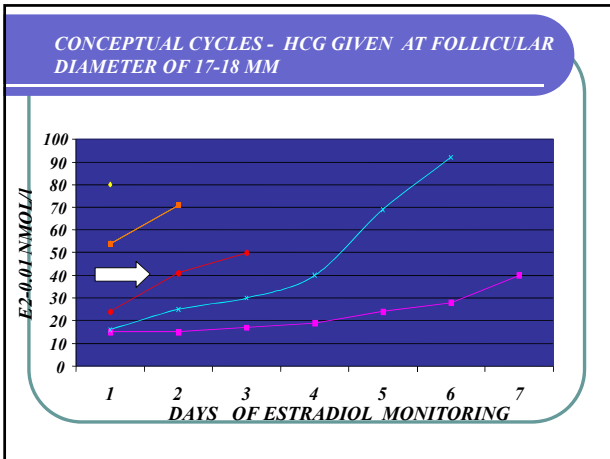
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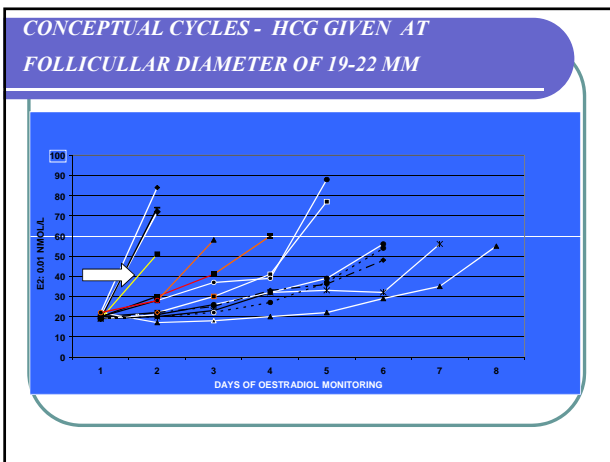
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**Estradiol - day of hCG (all ages – FSH<12, 2000-2003)**

Estradiol day of hCG	0,4-0,59 nmol/l	0,6-1,25 nmol/l	
Cycles	180	217	NS.
Positive Puncture (PP)	77%	76%	NS.
ET/cycle	58%	54%	NS.
Blastocyst Development	47%	49%	NS.
Pregnancy /ET of Blastocyst	37%	37%	NS.
Pregnancy/ ET of Morula	13%	6%	N.S.
Live birth/cycle	11%	10%	NS.

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*Conclusion*

- *We consider this protocol of monitoring an unstimulated cycle as a serious treatment option in IVF*
- *High endometrial receptivity in fresh natural cycles is evidenced also by high implantation rates of frozen thawed blastocysts*
- *In the future monitoring of the natural cycle could be made simpler by using a quick urinary oestradiol glucoronide test provided that it could be adjusted to serum oestradiol concentrations of 0,35-0,4 nmol/l*

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