

Patients' perspectives

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Outline

- Definition of patients
- PGS
- PGD
- Conclusion

Definition of patients

- Couple with childwish, but

1. Infertile and needing IVF

2. Genetic defect

Infertile couple needing IVF/ICSI

- over 36 years
- repeated IVF failures
- recurrent miscarriages

- PGS a solution?

PGS a solution? ??????

- Depends mainly on doctors' perspectives
- Of course couple wants highest success rate
- Do we know enough ?
- Ideally every center should do RCT
- Too easy to say that others do not do well
- Multicenter study ESHRE may bring answer
 - Problem may be cost
 - Why not ask industry because if efficient, return will be there

Couple: Genetic problem +/- infertility

- Child with disease(RR:25%)
- One partner with disease(RR:50%)
- Male partner infertile due to translocation (46,XY,t(4;11))
- PGD a solution

PGD a solution

- Within the frame of counseling
- If PND is no option
- If donor gametes or donor embryos are no option

PGD as a solution

- Why PGD and no PND?
- What do patients expect?
- What do patients need to know?
- What is available?
- How to decide about requests by patients?
- Future

Why PGD and no PND?

- Termination of pregnancy is no option
 - from the start
 - after one or more TOP
- Infertility
- HLA typing to conceive 'saviour' baby

What do patients expect?

- To be informed
 - By geneticist
 - By gynecologist
 - By others (patient support group)
 - By informed consent
- To be referred
 - To a 'complete' PGD center
 - To a virtually integrated PGD center
 - To benefit from optimal collaboration between the different actors
- To be able to afford

To be informed

- **Genetic counselor**
 - Decides whether request is valid
 - Establishes or confirms the genetic diagnosis & studies pedigree
 - Explains the PGD procedure
 - Collects necessary samples
- **Fertility specialist**
 - Explains IVF/ICSI procedure
 - Prescribes stimulation protocol
 - Collects oocytes and sperm
- **Informed consent**

To be informed

- **In IVF lab**
 - Fertilisation of eggs (IVF or ICSI)
 - Embryo culture
 - Embryo (or oocyte) biopsy
 - Blastomere handling
- **In genetic lab**
 - Assay for single cell testing
 - Readily available
 - To be developed
 - Blastomere (or PB/trophectoderm) testing

To be referred to

To physically or virtually integrated PGD center

Genetics	PGD lab	IVF center	Follow-up
1	2	3	4
1	2	3	4
1	2 transport	3	4
1	2 transport	3	4

To be able to afford

- Covered by national health insurance
- Not covered by health insurance
- Additional cost for travelling abroad

What do patients need to know

- Success rates in terms of delivery rates
 - per cycle (10 to 25%)
 - per transfer (20 to 35%)
 - including cryo-transfers
- Misdiagnosis rate (1%)
 - possibility of control PND
- Health of children born (reassuring)
- Need for further follow-up of children born
- Possibility to donate embryos for research
- In signed informed consent

What is available?

- PGD became established procedure known by fertility specialists and gradually also by geneticists
- Number of genetic diseases with known gene defect still low
- Limited number of centers offering PGD for monogenic diseases
- Option within frame of genetic counselling but unfortunately not for all

Monogenic conditions: OMIM

	Autosomal	X-Linked	Y-Linked	Mitoch.	Total
* Gene with known sequence	12467	608	48	35	13158
+ Gene with known sequence and phenotype	319	20	0	2	341
# Phenotype description, molecular basis known	2543	223	4	28	2798
% Mendelian phenotype or locus, molecular basis unknown	1637	138	5	0	1780
Other, mainly phenotypes with suspected mendelian basis	1854	135	2	0	1991
Total	18820	1124	59	65	20068

PGD centers consortium + ?

centers	n		
?	32		
PGS	50	6 (PB)	
chrom	45	6 (PB)	
monogenic	53	1 (PB)	
n diseases	>20	10-20	1-10
	18	9	26
extra centers	?	?	?

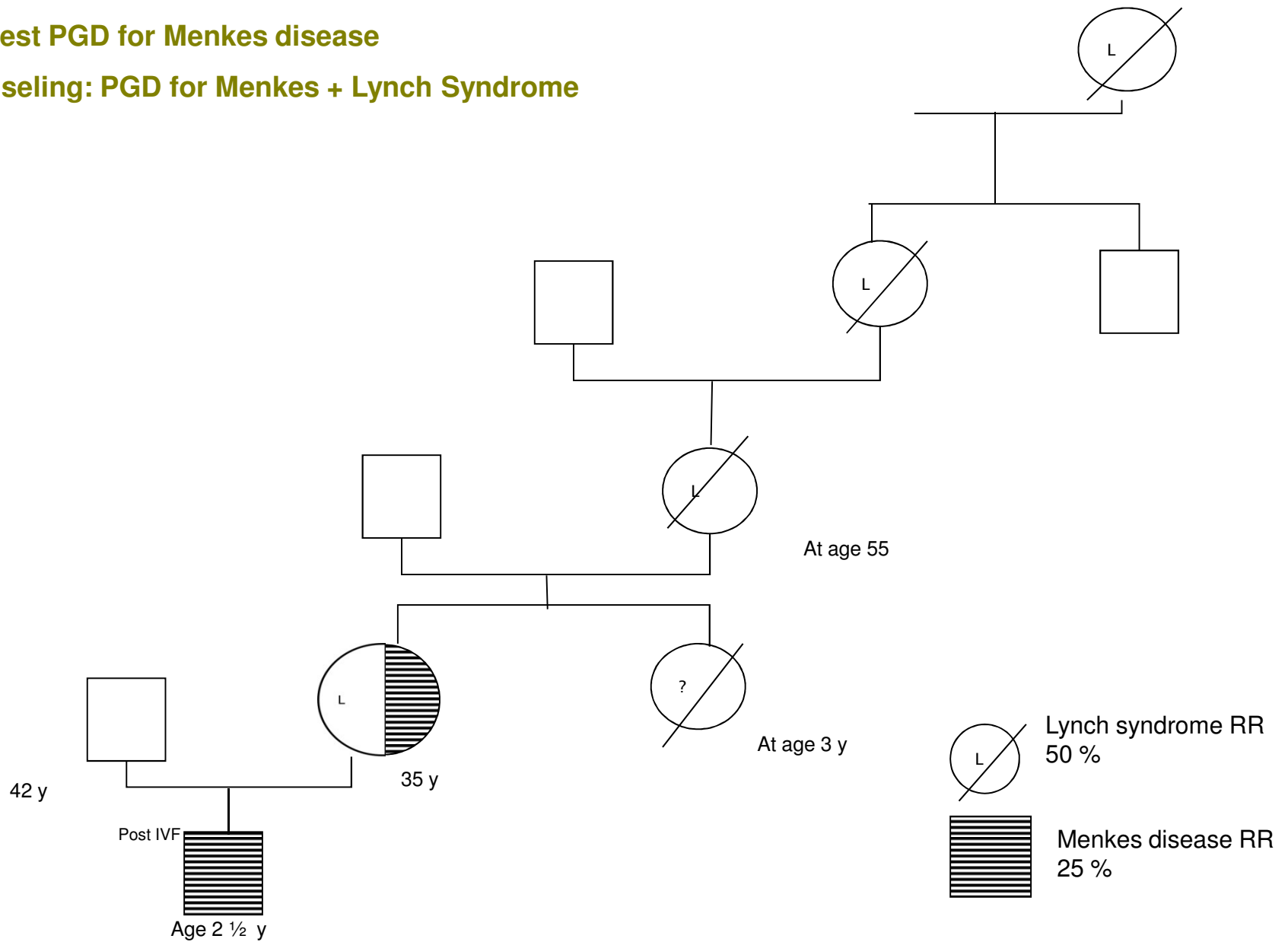
How to handle requests by patients

- No ET of female carriers of XL-disease
- Sexing for non-medical reasons
- HLA typing
- PGD for HD with one parent sick or at risk and single
- Couple with mental retardation

- BRCA + APKD
- Cadasil + Hem A
- Menkes and Lynch

Request PGD for Menkes disease

Counseling: PGD for Menkes + Lynch Syndrome



Decision making

- In general : let parents decide; they know what they are talking about
- But.....how far to go in protecting the child

What will the future bring?

- Improvement of technology to select correct embryo
- Improvement in freezing
- More ethical discussions

What will the future bring

- In terms of cost
 - High because of manpower in clinic and lab
 - Improving diagnostics may lower cost
 - Improving IVF may lower cost
 - Cost benefit studies needed
- In terms of well being
 - Preventing birth of affected person without burden of termination of pregnancy is beneficial
- Solution
 - Solidarity

Conclusion in view of patients

- PGS to improve IVF: wait for quality control
- PGS as PGD within the frame of IVF/ICSI in women over 38?
 - To decrease viable trisomies
 - To be considered
- PGD within the frame of genetic counseling
 - For high risk couples
 - Infertile couples due to chromosomal problems
 - Listen to couple and try to fulfill their wish at a reasonable cost

PGD + PGS VUB 1993-2009

