

Facilitation of home based PD in infants -safety first

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EWG 7.5.2010

Children in dialysis in Finland 7.5.2010

11 children in dialysis 5 i PD 6 i HD	• 1m	PD	PKD
	• 7m	PD	HUS
	• 1y	PD	CNF
	• 1y	PD	CNF
	• 3y	HD	CNF
	• 8y	HD	MMA
	• 10y	PD	Insuff. renis
	• 12y	HD	Vater assoc.
	• 12y	HD	Wegener disease
	• 15y	HD	Urethral valve
	• 16y	HD	Nephronofthis

Period 2005-2009 N= 44 patients

• 26 boys	• Diagnosis	
• 18 girls	• CNF	19
	• PKD	3
	• Nephronofthis	2
	• Urethral valve	8
	• GN	3
	• Wilm´s tumor	1
	• HUS	2
	• Other diagnosis	6

Age at start of dialysis

• < 1 yr	N=23	52,3%
• 1-3 yr	N= 9	20,5%
• 4-9yr	N=2	4,5%
• 10-12yr	N=4	9,1%
• 13-15yr	N=4	9,1%
• >15yr	N=2	4,5%

Choice of dialysis modality

• PD	N=37	84,1%
• HD	N=2	4,5%
• Pre-emptive	N=5	11,4%

Length of PD

- PD as first modality 517,5 months N=37
mean dialysis time /pat 11,65 dialysis months

Dialysis length	Number of patients
• < 3 mo	1
• 3-6 mo	5
• 6-9 mo	2
• 9-12 mo	11
• >1 yr	14
• >2 yr	2
• >3 yr	1
• >4 yr	1

Change of modality

- PD => HD N=5 13,5%
- HD=>PD N=0 0%

All planned dialysis start at the Children's hospital in Helsinki

- Patients from all over Finland
- Parents / families stay at The Ronald McDonald house
- Dialysis start and education program 1-2weeks
- 2 PD nurses, long experience

Beginning dialysis for infants

-with fluid bags meant for adults....

- Acute set
- 2 chambers with measurable volume
- 1ml precision
- We use them up to 100ml:s fill volume
- Premature, infant
- Check the materials!



To continue dialysis for infants

- Duo bag with a scale
- Digital bag scale (fish scale)
- 10gr precision.
- Are used when the fill volume is > 100ml
- Pediatric APD-tubing sets!
- Pediatric program in the APD machine



Dialysis volume for children

- European standard
- The volume is in the beginning 250ml /m² or 10ml /kg
- final volume 800ml/m² for barn <1year- 1000ml/m² for barn > 1year
- Dialysis frequency 1x /h - e.3h.
- From CAPD to → APD (machine)
- Under 1year appr.12x/ day and 1-4year appr. 10-12x/day, schoolchildren appr. 8-10x/day

Risks' in PD; Hypervolemia and hypovolemia

- Important to recognize symptoms
- Cardio vascular problems;
Strains the heart and the blood vessels
- Hypervolemia; RR high, become swollen
- Hypovolemia; dehydration, low RR, vomiting

Weight limits

- For day and night
- Increase the limits according to growth
- In infants the limits must be evaluated every 1 to 2 week
- Outpatient visits every week or alternative home-outpatient visits every other week and outpatient every other week

A child without residual function requires weight limits!

Example of weight limits for a child with the weight of 7.2 kg in APD

< 7.2kg	Low	Little UF
7.2-7.4kg	M,L,L,L Last fill L	More UF
7.4-7.6kg	M,L,L LastFill M	Yet more UF
>7.6kg	Medium	Much UF

I PP-measurement

- To measure the intra peritoneal pressure
- Is done before increasing the dialysis volume 0h and 1h and UF
- GOAL;
 <2v max. 10cmH₂O
 >2v max. 16cmH₂O

HERNIAS!

- approx 30% of all CNF children need to have surgery because of hernias
- Inguinal hernia, navel hernia
- Provoking reasons as cough, constipation, a bigger fill volume, inherited disposition



Bioimpedance measurement

- It measures how quickly electric impulses move through the body
- The more fluid the patient has in his body, the quicker the impulses move and the lower resistance values you get



HYKS,LNS,US

Why do BIA measurements?

- To clarify the patients fluid balance more securely
- An "easy", quick and painless method to assure how well the other fluid balance markers are accurate (po intake, heart ultrasound, Pro BNP, weight, ultra filtration, urine volume) when one cannot see any external signs of hyper-, or hypovolemia (for instance no swollenness in the face or extremities)

HYKS,LNS,US

A & O

- Regular control of weight limits!
- Daily measurement of the RR!
- Blood pressure medicine if needed
- Heart ultrasound controls regularly
- BIA measurement



Initial home visit before PD start

- Sometimes before PD-catheter insertion, sometimes afterwards
- All around Finland
- Local hospital pays travel costs
- Sometimes together with a social worker or other specialists

Why home?

- That's the place where dialysis will be done!
- Families are in their "own territory"
- Dialysis treatment shall be adjusted to fit into the home, not to turn the home into a dialysis place
- Makes it more concrete!
- Gives much valuable information

What information?

- Relationships in the family
- Dialysis arrangements
- Siblings and their needs
- How the family is managing, possible need of extra help
- You see things that aren't been said



Secure fixations



Fixation of the catheter and extension line the A & O

- Anchor tape
- Bandage to cover the exit-site



Safe details!



Exit Site care... as a teamwork



Once upon a time..

- There was a little girl with CNF, a mommy and a daddy who managed the albumin infusions at home and a inventor- grandfather who wanted to help the family...



Plexus to a hospital bed!



Take care of the parents!

- Tiredness and exhaustion are risk factors for peritonitis!
- Control can fail - routines are forgot
- Frequent disturbances of sleep
- Siblings
- Other diseases

Offer/ arrange relief

- Home Care nursing
- Regular inpatient possibilities on the ward = the parents know when they are free
- Outpatient home visits
- contact by telephone / e-post
- Arrange meetings with specialists
- Meeting other parents/families in the same situation

Safe facilities require multi professional cooperation!

- Safe care in all aspects require many kinds of knowledge!
- Social workers, psychologies, nurses, pediatricians, play therapists, nutritionals, technicians, health service providers, nephrologists, dialysis nurses, teachers and hospital clowns!
- Co-operation over hospital borders and over country borders!

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