

Semi-rigid hip protectors: One-year acceptability and compliance in the community

The PARACHUTES study

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Hip protectors

8 studies between 1993 and 2003

- Efficacy:
 - RR of hip fracture 0,34-0,45
 - Acceptability: 37-72%
 - Compliance: 25-35%
-
- Kannus P, Parkarri J, Niemi Set al. Prevention of hip fracture in edery people with use of hip protector. N Eng J Med 2000; 343: 1506-13
 - Parker M. J. Effectiveness of hip protectors for preventing hip fractures in elderly people : systematic review. BMJ.2006; 333: 27-30

Hip protectors

- Absorption and diffusion of the energy of fall impact
 - Soft
 - Semi-rigid
 - Rigid
- 123 euros (refunded in institution)



soft



Semi-rigid

Hip protectors (KPH® from GIBAUD®)



PARACHUTES: endpoints

- Observational study in general practice (with randomised intervention of compliance enhancement by phone calls)
- Primary endpoints:
 - Acceptability
 - Compliance
- Secondary endpoint
 - Effect on compliance of a regular nurse phone call

PARACHUTES: investigators, inclusion criteria of patients

- Investigators:
 - 91 volunteer GPs from Réseau de santé Paris-Nord,
 - 67 GPs actually included
- Inclusion criteria
 - People living at home
 - **And**
 - Age > 85
 - **Or**
 - Age \geq 75 ans
 - and history of fall, or less than 5 sec on one foot

PARACHUTES: DESIGN

- Collection of data from April 2005 to June 2006
 - inclusion, randomisation (Intervention/control)
 - Hip protectors delivery
 - Follow-up M1-M3-M6-M12
 - *Questionnaires CEMKA*

PARACHUTES: 553 patients

Age	85.4 years
Gender (F/M)	78% / 22%
Weight	62.9 kgs
Size	1.59 m
BMI	24.6
Fall during past year	1.8
History of hip fracture (Yes/No)	12% / 88%
Number of drugs prescribed	5.6
Dementia (Yes/No)	10.6% / 89.4%
Psychotropic Drugs (Yes/No)	38.3% / 61.7%

Patients (intervention/control)

	Control	intervention	P
Age at inclusion	85,2	85,2	0,9
• ≥ 85	41,2%	40,3%	0,8
• < 85	58,8%	59,7%	
Gender			
• Male	20,3%	20,8%	0,9
• Female	79,7%	79,2%	
BMI	24,7	25,0	0,4
Nb of falls during past year	1,9	2,0	1
History of hip fracture	85,9%	89,5%	0,3
Nb of drugs prescribed	5,8	5,9	0,8
Dementia	8,6%	11,0%	0,4
Psychotropic drugs	41,0%	39,0%	0,7

PARACHUTES: acceptability

- 359 / 553 patients
- 64,9%

People who accepted/People who refused (MONOVARIATE)

	Yes (n=359)	No (n=194)	P
Age at inclusion	85,2	85,8	0,2
• ≥ 85 ans	40,7%	51,8%	0,013
• < 85 ans	59,3%	48,2%	
Gender			
• Male	20,6%	23,9%	0,4
• Female	79,4%	76,1%	
BMI	24,9	24,3	0,2
Nb of falls during past year	2	1,5	0,13
History of hip fracture	12,3%	12,8%	0,9
Nb of drugs	5,9	5,1	0,002
Dementia	9,8%	12,0%	0,4
Number of drugs prescribed	40,0%	35,1%	0,3

Reason for refusal of hip protectors (N=194)

I don't think I'll fall	30%
It's not easy to use	25%
It's not esthetic	15%
It won't protect me	10%
It's not hygienic	3%
Others	17%

PARACHUTES: compliance

	1 month	3 months	6 months	12 months	p
Use from time to time	85,5%	76,5%	73,4%	70,4%	<0,001

PARACHUTES: compliance

	1 month	3 months	6 months	12 months	p
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PARACHUTES: compliance

	1 month	3 months	6 months	12 months	p
Use from time to time	85,5%	76,5%	73,4%	70,4%	<0,001
Actual use today	44,4%	38,9%	42,9%	39,3%	0,6
Duration of day use during last two weeks					
○ Every day	35,9%	30,5%	35,9%	31,7%	
○ ≥ 7 days	28,6%	27,0%	26,1%	25,5%	0,5
○ ≥ 2 days	18,3%	16,0%	16,8%	22,4%	
○ < 2 days	17,2%	26,5%	21,2%	20,5%	

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○ ≥ 2 days	18,3%	16,0%	16,8%	22,4%	
○ < 2 days	17,2%	26,5%	21,2%	20,5%	
Night use					
○ always	8,6%	3,8%	5,5%	4,9%	
○ Sometimes	8,9%	10,9%	9,0%	9,8%	0,4
○ Never	82,5%	85,3%	85,6%	85,3%	

PARACHUTES: compliance.

Effect of intervention

	Control	Intervention	P
Use from time to time	69,1% (94)	71,6% (101)	0,6
Actual use today	32,6% (29)	45,7% (43)	0,07
Duration of day use among last two weeks			
○ Every day	25,7% (19)	36,8% (32)	0,1
○ ≥ 7 days	21,6% (16)	28,7% (25)	
○ ≥ 2 days	29,7% (22)	16,1% (14)	
○ < 2 days	23,0% (17)	18,4% (16)	
Night use			
○ always	5,7% (5)	4,2% (4)	0,9
○ Sometimes	9,1% (8)	10,4% (10)	
○ Never	85,2% (75)	85,4% (82)	

PARACHUTES: predictive factors of compliance

Use of protectors from time to time during last two weeks at 12 months

	yes (N=195)	no (N=82)	P
Age at inclusion	84,4	85,1	0,4
• < 85	63,2%	59,8%	0,6
• ≥85	36,8%	40,2%	
Gender	NR=3	NR=1	
• Male	20,8%	14,8%	0,2
• Female	79,2%	85,2%	
BMI	25,2	24,4	0,2
Nb of falls during past year	1,8	2,6	0,2
History of hip fracture	6,3%	15,2%	0,02
Nb of drugs prescribed	5,7	5,6	0,7
Dementia	9,7%	4,9%	0,2
Psychotropic drugs	37,1% (72)	42,5% (34)	0,4

Conclusion (1)

- High level of acceptability: 64,9%
- Predictive factors of acceptability :
age < 85, (possibly nb of drugs prescribed)
- Main reason for refusal: lack of perception
of the risk of falling

Conclusion (2)

- After one year,
 - 70% people go on using hip protectors ‘from time to time’ (46% ITT)
 - 57% of people go on using hip protectors ‘more than one day out of two’ (37% ITT)
- One predictive factor of non-compliance: previous history of hip fracture
- Nurse’s phone call: no effect on compliance

Conclusion(3)

- Questions
 - soft hip protectors?
 - Are patients able to decide whether to wear the protectors or not?