5 years follow up nurse lead medical intervention after needle stick injuries - trends

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Roy Liechenstein,, 1964

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Disclosure

I have no actual or potential conflict of interest in relation to this program/presentation.

1. Background
2. Aim
3. Design, methods, analysis
4. Results
5. Discussion
6. Conclusion

Post Exposure Profylaxis (PEP) protocol

Protection against hepatitis B, hepatitis C en HIV

Risk and reduction

- HBV: 30% - vaccination > 90% protection
- HCV: 3% - eradication with early treatment
- HIV: 0,3% - post expositie profylaxe > 81%

Post Exposure Profylaxis HIV

- Research with animals show diminished risk in primates

  McGlure et al, Annual New York Academic Science. 1990;616:287-298

  Bottiger et al. Aids. 1997;11:157-162

- One single case report shows 81% risk reduction in humans when using zidovudine

  Cardo et al. NEJM, 1997;337:1485-1490

- Cochrane review: all PEP is being designed on that one single case. Young et al, Cochrane database 2007;DOI: 10.1002/14651858.CD00283'5

- Cochrane advice: PEP: 3 medications. Accept higher possibility of side effects


NURSE

Why shift from physician's tot nurses?

- Many, many mistakes
- Logistic errors: prescriptions, follow up, etc, etc
- Patients not getting any treatment when indicated
- Patients being overtreated

- Dutch policy to shift tasks and responsibilities

-> 3 specialized nurses in charge of supervising and follow up

1 ½ jr follow up

- Safety
  - No more logistic errors
  - More structure and communication between ER and Inf Dis team->better follow-up
  - Min 30x treatment and consequences prevented
  - More knowledge

1 ½ jr follow up

- Cliënt questionaire
  - –Time in ER is shorter.
  - –Doctors + ER: direct, clear, educational
  - –External partners: idem
- Staff/victims:
  - –Injuries are being adressed serious

1 ½ jr follow up

- Finance:

30x prevention of overtreatment.

Costs € 5000,- p.p = €150.000


WHAT? WHY DID YOU ASK THAT? WHAT DO YOU KNOW

Background -1-

In NI 2 publications:

1997-1999: constant increase PEP

Vd Ende et al, Int Journal of STD&Aids. 2002;13:30-34

1997-2001: increase of reporting incidents, but bias

Regez et al, NTVG 2002;146:617-621

Several reports on reduction transmission when protocl is being followed.

Gemert Pijnen et al, Journ of Hospital Infection. 2006;62:166-173

Sonder et al. BMJ 2005;330:825-829

Aim

Research question:

What is the trend in the number and character of occopational incidents after implementation of protocol with nurse lead intervention

Design

- Retrospective, observational
- 2008-2013 all reports MUMC

- MUMC vs not-MUMC
- Occupational yes/no
- Demografics victim
- Occupation victim
- Risk evaluation injury

Analysis

- Desriptives; frequenty- and crosstabs
- Chi square homogeneity crosstabs

- Trend absolute number of injuries: lineair regression
- Trend proportions: logistic regression

Results

- Total reports 1262
- MUMC 983 (78%) – others 279 (22%)
- MUMC: 835 occupational, 148 non-occupational
- MUMC-occupational:
  - 66% female, 34% male
  - Mean age 35 (17-64)
  - 42% nursing staff, 23% medical staff, 10% OR-pers
  - Source: 76% no known risk, 7% MSM, 7% (ex-) IVD

Results (MUMC occupational)

Increase reports absolute: 72%. Significant trend.

	2008#	2009	2010	2011	2012	Totaal	Lineair regression coëfficiënt (B)	95% -CI
Total	122	149	158	196	210	835	22.3*	15 - 29
Number incidents (%)								
Internal	95 (78)	119 (80)	121 (77)	158 (81)	180 (86)	673(81)	20.9*	12 - 30
External	27 (22)	30 (20)	37 (23)	38 (14)	30 (14)	162(19)	1.4	-4 - 6
Risk evaluation(%)								
High	90 (74)	100 (67)	100 (63)	127 (65)	120 (57)	537(64)	8.7*	1 – 17
Low	32 (26)	49 (33)	58 (37)	69 (35)	90 (43)	298(36)	13.6*	10 - 17

Results (MUMC- occupational)

No change in classification type injury or profession

	2008	2009	2010	2011	2012	Totaal	Logistic regression coëfficiënt B	p
Type incident%								
Needle stick	76	76	75	68	74	74	-0.055	0.330
Cutting	16	11	12	17	13	14	0.013	0.853
Spray	6	9	11	13	10	10	-0.021	0.892
Other	2	4	1	3	3	2	-0.021	0.892
Profession victim %								
Nurse	35	41	46	44	43	42	0.064	0.208
Medical	21	28	20	24	22	23	-0.008	0.893
Lab + steril	11	5	7	5	10	8	-0.027	0.772
OR non medical	13	5	8	11	11	10	0.053	0.536
Other	20	21	19	16	14	17	-0.115	0.078

Results

- Significant increase in total number reports
- In particular MUMC employees (intern)
- In particular low risk incidents
- Increase cannot be related to specific type of incident
- Increase cannot be related to speficic profession

Discussion

Methodologie

- MUMC reports: cross check with Infection prevention department: 100%. Not possible for non-MUMC reports

- <2008?

Discussion

- Increase caused by changes in setting?
- Reporting behaviour
  - Medical students, Europa 38-66%
  - Medical students USA 52%
  - Surgeons 33%

Rosenthal et al. JAMA 1999;281:1660

Salzer etal. Int Journ of Environmental Health 2001;214:407-410

Sharma et al Acad Medicine 2009;84:815-824

Sharma et al, Journ of Hospital infection 2008;70:66-70

Discussion

Reasons for non-reporting

- Time
- Perceived seriousness of disease
- Perceived efficacy of reporting
- General health behaviour

Tabak et al, Issues in Clinical Nursing 2006;15:1228-1239

Conclusion

- Increase of low risk (MUMC-) occupational incidents due to better reporting behaviour.
- Reasons:
  - Quick, uniform processing at ER
  - Better confidence employees

- Further research on reasons reporting behaviour
- Further research on source, (type, testing), interventions, outcomes

Questions?