Farmakoepi-Nyt

November **Dansk Selskab for Farmakoepidemiologi's nyhedsbrev** *1999*

No. 10

MEDDELELSER FRA BESTYRELSEN

MILJØ

ORIENTERING

MØDER OG KURSER

Sekretariat: Klinisk Farmakologi
Syddansk Universitet - Odense Universitet, Winsløwparken 19, 3. sal, 5000 Odense C
Tlf.: 6550 3788. Fax: 6591 6089. Giro: 091-2425

Dansk Selskab for Farmakoepidemiologi

Farmakoepidemiologi er en relativt ny gren af epidemiologien. Som navnet antyder, drejer det sig om anvendelse af epidemiologiske principper på lægemiddelrelaterede problemstillinger. Deskriptive undersøgelser af lægemiddelforbrug, kvalitative undersøgelser af holdninger til brug af medicin, farmakoøkonomiske vurderinger, og analytiske epidemio-logiske studier af lægemiddelvirkninger omfat-tes alle af farmakoepidemiologi og illustrerer dens bredde.

Formålet med Dansk Selskab for Farmakoepidemiologi er at fremme udviklingen af denne disciplin i Danmark. Selskabet er åbent for alle, som interesserer sig for farmakoepidemiologi inden for sundhedssektoren, de akademiske institutioner og industrien.

Selskabet afholder mindst ét årligt videnskabeligt møde, udgiver desuden et nyhedsbrev og samarbejder med tilsvarende udenlandske og internationale organisationer.

Vedtægter og indmeldelsesblanket kan rekvireres ved henvendelse til selskabets sekretariat; adresse ses på forsiden af Nyhedsbrevet. Årskontingentet er 200 kr.

Bestyrelsen består p.t. af cand.pharm., ph.d. *Anna Almarsdóttir*, Institut for Samfundsfarmaci, Danmarks Farmaceutiske Højskole (formand); adjunkt, cand.med., ph.d. *Morten Andersen*, Klinisk Farmakologi, Syddansk Universitet - Odense Universitet (sekretær); 1. reservelæge, dr.med. *Jesper Hallas*, Medicinsk afd., Svendborg Sygehus; cand.pharm. *Bente Overgaard Larsen*, Fyns Amt, Sundhedssekretariatet; cand.med. *Flemming Hald Steffensen*, Center for Epidemiologisk Grundforskning, Århus Universitet.

Selskabets revisor er afdelingschef, cand.oecon. *Kjeld Christensen*, Astra Danmark A/S og revisorsuppleant er reservelæge, ph.d. *Jens-Ulrik Rosholm*, Afdeling KKA, Odense Universitetshospital.

Redaktion: *Jesper Hallas*

Materiale, som ønskes optaget i nyhedsbrevet bedes sendt til adressen på forsiden. Indsendere opfordres til at medsende en diskette i Microsoft Word- eller WordPerfect-format.

Farmakoepi-Nyt

Vi vil her benytte lejligheden til at efterlyse indlæg fra medlemmerne. Hidtil har alle indlæg i nyhedsbrevet været forfattet af bestyrelsesmedlemmer eller personer med tæt relation hertil. Vi vil for eksempel gerne besvare faglige spørgsmål og formidle kontakter mellem medlemmer med nært beslægtede interesser. Kritik og forslag modtages også gerne.

Anna Birna Almarsdóttir

MEDDELELSER FRA BESTYRELSEN

Formandens klumme

Kære medlemmer

Først vil jeg takke alle jer der svarede på spørgeskemaet om DSFEs aktiviteter. Vi er i gang med at analysere jeres svar, og jeg vil fremlægge dem til den kommende generalforsamling som led i formandens beretning. Det er allerede klart at den nye bestyrelse har noget at rette sig efter, når de starter arbejdet efter valget.

Jeg ser frem til et godt Årsmøde med overskriften ”Nytter det noget?”, der er en temadag om interventionsstudier. Vi er så heldige at have besøg af Dr. Malcolm Maclure fra Canada. Han er en ekspert i metoder til evaluering af interventioner. Det har jeg håb om, at I er interesserede i at vide noget mere om. Det er vigtigt at vi får taget hul på dette emne i selskabet. Det store spørgsmål er om interventioner som patient- og lægeuddannelse, ordinationsprofiler, farmaceutisk omsorg, lovændringer m.fl. har en indvirkning på

lægemiddelanvendelsen i den ”rigtige” retning?

Men hvad mener vi med rigtig og forkert lægemiddelanvendelse?
Lægemiddelindustriforeningen Lif afholdt en konference den 26. oktober d.å. med overskriften ”Patientbehandling i dag og i fremtiden – rationel eller politisk”. Vi der er sundhedsuddannede synes vi kender rationelt lægemiddelforbrug når vi ser det. For andre der forsker i sundhed og sygelighed er det et mere indviklet videnskabsteoretisk spørgsmål. I lovene for DSFE står der i 1. paragraf: ”Selskabets formål er at fremme udviklingen af farmakoepidemiologi i Danmark for herved at bidrage til en *hensigtsmæssig* anvendelse af lægemidler.” (mine versaler). Vi som farmakoepidemiologiinteresserede må tage stilling til hvad vi mener med ordene ”hensigtsmæssig” og ”rationel” når vi omtaler lægemiddelanvendelse.

Jeg hæftede mig også ved de modsætninger der omtales i Lifs overskrift: ”rationel eller politisk?” Jeg har altid troet at der eksisterede noget der var politisk rationelt. Jeg er også kommet til at tro på at lægemiddelbrugerne har deres egen udgave af rationalitet. De af medlemmerne der beskæftiger sig direkte med politiske beslutninger ved også, at der eksisterer en anden rationalitet hos beslutningstagerne end den som sundhedsprofessionerne forstår. De er mere optaget af økonomiske hensyn i lægemiddelbehandlingen. Derfor må vi som medlemmer af DSFE have en bred forståelse for at ordene er underkastet en vis relativisme, og at det er der ikke noget at gøre ved.

Med disse tanker om hhv. nytten af interventioner og dertil hørende rationalitet i lægemiddelbehandlingen byder jeg jer velkomne til det næste Årsmøde. Jeg glæder mig til at se jer til en sjov og udbytterig dag.

Med venlig hilsen

Anna Birna Almarsdóttir

MILJØ

NEPI - Netværk for lægemiddelepidemiologi

Af Gunnar Lindberg

NEPI etableredes i 1994 efter at en statslig betænkning havde fastslået behovet for et netværk af læger, sygeplejersker og apotekere til at drive lægemiddelepidemiologisk aktivitet. Stifterne af NEPI, Apoteksbolaget (nuværende Apoteket AB) og Apotekarsocieteten oprettede en fond, hvis afkast i det væsentlige finansierer NEPIs drift. Samme år etableredes en bestyrelse, og i 1995 rekrutteredes NEPIs chef, professor Arne Melander og derefter de øvrige medarbejdere. NEPI har en professionel bestyrelse, med tre medicinske og to farmaceutiske professorer.

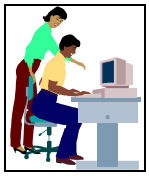
NEPIs overordnede formål er at fremme en medicinsk og økonomisk effektiv anvendelse af lægemidler, gennem en kombination af forskning, studier, analyser, uddannelse og information. NEPIs tre hovedområder er derfor lægemiddelepidemiologi, lægemiddeløkonomi og lægemiddelinformation.

Hovedvægten er lagt på vurdering af effektiviteten af lægemiddelbehandling i gængs praksis. Da mere end 75% af lægemiddelforbruget hidrører fra almen praksis, samarbejder NEPI især med primærsektoren og med landstingene (amterne, red.), som er ansvarlige for sundhedsvæsnet i Sverige. Derudover gennemfører NEPI lægemiddelafprøvninger i almen praksis.

I øjeblikket (efterår 1999) består personalet i Malmö af lederen, professor Melander, som er epidemiolog, Gunnar Lindberg, docent i almen medicin og en sekretær, Regina Ringkvist. På konsulentbasis haves desuden statistikeren Jonas Ranstam fra Högskolan i Malmö. I Stockholm har NEPI en administrator (Kristina Lundh). For eksterne midler har vi ansat en

sygeplejerske, Kerstin Lindvall, og en laborant, Mona Hansson.

Rundt om denne kerne befinder sig netværket. De fleste svenske landsting har været involveret i NEPIs projekter. Et af de første NEPI-studier blev således udført sammen med primærsektoren i Värmland, en kortlægning af hypertensionsbehandlingen ved 22 lægestationer.



Andre landsting med betydende engagement i NEPI projekter er Skaraborg, hvor NEPI samarbejder med Skaraborginstituttet om studier af hypertensions- og diabetesbehandling, og Jönköping som i samarbejde med NEPI kortlægger behandlingen af type 2 diabetes og dens konsekvenser. NEPI har påvist, at næsten 300 millioner kroner kan spares årligt i Sverige ved fire enkle analogsubstitutioner af antihypertensive midler.

Vi har anvendt registerdata ved flere studier. I et receptregisterstudie fandt vi, at selvmord var hyppigere hos patienter behandlet med calciumantagonister end med andre antihypertensiva. Flere registerstudier på Malmökohorten af mænd født i 1913 taler for at behandlede hypertonikere, på trods af behandlingen, fortsat har en betydende overhyppighed af hjerte-karsygdom. I et andet receptregisterstudie, baseret på OPED, testedes sammenhængen mellem lipidsænkende farmaka og depression. Ialt 40 publikationer er udgået fra NEPI.

Ud over de rent epidemiologiske studier er flere eksperimentelle studier i støbeskeen. Et forebyggende diabetesstudie med glimepirid skal afvikles i Norge og Sverige over fem år. I et andet studie skal visse perorale antidiabetika afprøves som supplement til patienter som ikke er velregulerede på sulfonylureider. Vi har for nylig indledt et skånsk-dansk samarbejde med Klinisk Farmakologisk Enhed på Bispebjerg, Lægemiddelstyrelsen og Institut for Samfundsfarmaci på Farmaceutisk Højskole i København.

Information om NEPI, organisation, rapporter og videnskabelig publikationer fås via www.nepi.net.

E-mail: gunnar.lindberg@nepi.net eller arne.melander@nepi.net.

Postadresse:
NEPI, Medicinskt forskningscentrum, Universitetssjukhuset MAS, 205 02 Malmö, Sverige.

ORIENTERING

Interessante artikler

Bjerrum L, Sogaard J, Hallas J, Kragstrup J. Polypharmacy in general practice: differences between practitioners. Br J Gen Pract 1999; 49:195-8.

Blackburn SC, Oliart AD, Garcia-Rodriguez LA, Perez-Gutthann-S. Antiepileptics and blood dyscrasias: a cohort study. Pharmacotherapy 1998; 18: 1277-83.

Derby LE, Myers MW, Jick H. Use of dexfenfluramine, fenfluramine and phentermine and the risk of stroke. Br J Clin Pharmacol 1999; 47: 565-9.

Dunn N, Thorogood M, Faragher B, de-Caestecker L, MacDonald TM, McCollum C, Thomas S, Mann R. Oral contraceptives and myocardial infarction: results of the MICA case-control study. BMJ 1999; 318: 1579-83.

Evans JM, Newton RW, Ruta DA, MacDonald TM, Stevenson RJ, Morris AD. Frequency of blood glucose monitoring in relation to glycaemic control: observational study with diabetes database. BMJ 1999; 319: 83-6.

Jick H. A database worth saving. Lancet 1997; 350: 1045-6.

Jick SS, Myers MW, Jick H. Risk of idiopathic cerebral haemorrhage in women on oral contraceptives with differing progestagen components. Lancet 1999; 354: 302-3.

Jick H, Garcia-Rodriguez LA, Perez Gutthann S. Principles of epidemiological research on adverse and beneficial drug effects. Lancet 1998; 352: 1767-70.

Meier CR, Derby LE, Jick SS, Vasilakis C, Jick H. Antibiotics and risk of subsequent first-time acute myocardial infarction. JAMA 1999; 281: 427-31.

Merlo J, Lindberg G, Lindblad U, Lindgren A, Rastam L, Melander A. Utilization of cardiovascular drugs (blood pressure lowering drugs, lipid lowering drugs and nitrates) and mortality from ischaemic heart disease and stroke. An ecological analysis based on Sweden's municipalities. Eur J Clin Pharmacol 1999; 55: 69-76.

Myers MW, Jick H. Terfenadine and risk of acute liver disease. Br J Clin Pharmacol 1998; 46: 251-3.

Olesen C, Steffensen FH, Sorensen HT, Nielsen GL, Olsen J, Bergman U. Low use of long-term hormone replacement therapy in Denmark. Br J Clin Pharmacol 1999; 47: 323-8.

Olesen C, Steffensen FH, Nielsen GL, de Jong van den Berg L, Olsen J, Sorensen HT. Drug use in first pregnancy and lactation: a population-based survey among Danish women. The EUROMAP group. Eur J Clin Pharmacol 1999; 55: 139-44.

Olsen JH, Johansen C, Sorensen HT, McLaughlin JK, Mellemkjaer L, Steffensen FH, Fraumeni JF Jr. Lipid-lowering medication and risk of cancer. J Clin Epidemiol. 1999; 52: 167-9.

Prach AT, McGilchrist MM, Murray FE, Johnston DA, MacDonald TM. Prescription of acid-suppressing drugs in relation to endoscopic diagnosis: a record-linkage study. Aliment Pharmacol Ther 1999; 13: 397-405.

Sorensen HT, Rothman KJ, Gillman MW, Steffensen FH, Fischer P, Sabroe S. Historical cohort study of in utero exposure to uterotonic drugs and cognitive function in young adult life. BMJ 1999; 318: 433-4.

Thrane N, Steffensen FH, Mortensen JT, Schonheyder HC, Sorensen HT. A population-based study of antibiotic prescriptions for Danish children. Pediatr Infect Dis J. 1999; 18: 333-7.

Aalykke C, Lauritsen JM, Hallas J, Reinholdt S, Krogfelt K, Lauritsen K. Helicobacter pylori and risk of ulcer bleeding among users of non-steroidal anti-inflammatory drugs: a case-control study. Gastroenterology 1999; 116: 1305-9.

MØDER OG KURSER

Danmark:

Quantitative Approaches to the Evaluation of Health Care Inputs. International PhD Course

Tid: 3.-14. april 2000.

Sted: Danmarks Farmaceutiske Højskole, København.

Nærmere oplysninger:
E-mail: annalm@dfh.dk eller ehh@dfh.dk

Udlandet:

6th EUFEPS Conference on Optimising Drug Development

Tid: 30. november-2. december 1999.

Sted: Convention Center, Basel, Schweiz.

Nærmere oplysninger: European Federation for Pharmaceutical Sciences.
E-mail: sixconfer@eufeps.org

Sund Sundere Øresund – En konference om sundhedsvæsenet og sygdomsforebyggelse

Tid: 26.-27. januar 2000.

Sted: Malmö.

Tilmeldingsfrist: 15. november 1999.

Nærmere oplysninger: Medicon Valley Academy.
E-mail: sund@mva.org
Website: www.mva.org

Methodological Perspectives in Health Services Research. International PhD Course

Tid: 30. januar-5. februar 2000.

Sted: Dansk Folkeferies Center, Gilleleje.

Nærmere oplysninger:
E-mail:ehh@dfh.dk eller jam@dfh.dk

Health Services Research & Pharmacy Practice 2000

Tid: 13.-14. april 2000.

Sted: Kings College Conference Centre, University of Aberdeen, England.

Nærmere oplysninger:
E-mail: a.stalker@rgu.ac.uk

Millenial World Congress of Pharmaceutical Sciences

Tid: 16.-20. april 2000.

Sted: San Francisco, USA.

Nærmere oplysninger:
E-mail: m.swakhoven@fip.nl

ESCP Spring Conference on Clinical Pharmacy: Clinical Pharmacy Skills for the New Therapeutic Horizons

Tid: 11.-13. maj 2000.

Sted: Reykjavik, Island.

Nærmere oplysninger:
E-mail: krisline@shr.is (=president) eller incentiv@itn.is (=conference organizer)

ISPOR 5th Annual International Meeting

Tid: 21.-24. maj 2000.

Sted: Arlington VA, USA.

Nærmere oplysninger:
E-mail: info@ispor.org
Website: www.ispor.org

7th International Conference on System Science in Health Care

Tid: 29. maj-2. juni 2000

Sted: Budapest, Ungarn.
Nærmere oplysninger:
E-mail: ve@gsf.de (=program committee)
eller: conftour@mtesz.hu (=organizer)

ISTACH 16th Annual Meeting

Tid: 18.-21. juni 2000.

Sted: Haag, Holland.

Nærmere oplysninger:
E-mail: e.zoer@nivel.nl

ÅRSMØDE 1999

Tema: Interventionsstudier

Tid: Torsdag den 11. november 1999, kl. 9.30-ca. 15.45 efterfulgt af generalforsamling

Sted: Institut for Sundhedstjenesteforskning, Syddansk Universitet – Odense Universitet, Winsløwparken 19, stuen, lokale 19.01, 5000 Odense C

ENDELIGT PROGRAM

9:30 Ankomst med kaffe og morgenbrød

10:00 Velkomst ved Anna Birna Almarsdóttir

10:10 Malcolm Maclure: *The Better Prescribing Project: A randomised, controlled trial of small group education and feedback with prescription profiles.*
Pharmacare, Ministry of Health and Ministry Responsible for Seniors, Victoria, British Columbia, Canada.

10:55 Frugt- og juicepause

11:15 Malcolm Maclure: *A randomised policy trial of a change in drug benefits – the interface of politics and science.*

12:00 Frokost

13:00 Jens Søndergaard: *Feedback on prescription profiles. Presentation of two randomised controlled studies.*
Institute of Public Health, Clinical Pharmacology, University of Southern Denmark, Main Campus: Odense University.

13:15 Birthe Søndergaard, Hanne Herborg: *Pharmacy-based intervention projects.*
Pharmakon A/S, Hillerød.

13:30 Anna Birna Almarsdóttir, Almar Grímsson: *Over-the-counter codeine use in Iceland. The impact of increased access.*
Royal Danish School of Pharmacy, Copenhagen.

13:45 Poster presentation: Jens Søndergaard, Morten Andersen, Jakob Kragstrup, Lars F. Gram, Bente O. Larsen, David Gaist, Hans-Ulrik Schaffalitzky de Muckadell, Søren H. Sindrup: *Verbal and written information to triptan users. Design of a randomised, controlled trial on the effect on consumption.*
Institute of Public Health, Clinical Pharmacology, University of Southern Denmark, Main Campus: Odense University.

13:52 Poster presentation: Pia Ehlers, Charlotte M. Ejlersen, Steinunn Gunnarsdottir, Jens Kierkegaard, Kim Kristensen, Bodil Munk Hansen, Bente O. Larsen, Kirsten Nielsen, Aase Nissen, Kirsten Schæfer, Birgit Toft, Keld Vægter. *Use of drug databases – the Danish way.*
Funen County, Health Secretariat, Odense.

14:00 Pause: Kaffe, te, kage og posterbeskuelse

14:20 Jesper Hallas: *The fidelity coefficient. A measure of the completeness of intervention data.*
Department of Medicine C, Odense University Hospital.

14:35 Bente Krag Ingvardsen, Claudia Ranneris: *The use of viagra in Denmark.*
Danish Medicines Agency, Copenhagen.

14:50 Nana Thrane, Charlotte Olesen, Henrik Toft Sørensen, Henrik Carl Schønheyder: *Previous antibiotic cures as risk factor for antimicrobial resistance among bacteria in the middle ear in 0-5 year old children*.
The Danish Epidemiology Science Centre, University of Aarhus.

15:05 Kort pause

15:15 Charlotte Olesen, Charlotte Søndergaard, Nana Thrane, Gunnar Lauge Nielsen, Lolkje de Jong-van den Berg, Jørn Olsen: *Do pregnant women use dispensed medications? Comparison of exposure data obtained in a prescription database and by interview.*
The EuroMAP Group. The Danish Epidemiology Science Centre, University of Aarhus.

15:30 Pia Knudsen, Ebba Holme Hansen: *Young women's use of SSRIs – from one stigma to another.*
Royal Danish School of Pharmacy, Copenhagen.

ca. 15:45 **Generalforsamling**

Pris: 100 kr. for medlemmer og 200 kr. for ikke-medlemmer. Betalingen dækker udgifter til mad og drikke.

Tilmelding: Sekretær Henrik Horneberg
Center for Klinisk Farmakologi i Odense (CeKFO)
Syddansk Universitet – Odense Universitet
Winsløwparken 19
5000 Odense C
Tlf.: 6550 3788
E-mail: h-horneberg@cekfo.sdu.dk

GENERALFORSAMLING 1999

Tid: Torsdag den 11. november 1999, umiddelbart efter årsmødet

Sted: Institut for Sundhedstjenesteforskning, Syddansk Universitet – Odense Universitet, Winsløwparken 19, stuen, lokale 19.01, 5000 Odense C

ENDELIG DAGSORDEN:

1. Valg af dirigent og referent.
2. Formandens beretning.
3. Udvalgsberetninger (ingen udvalg p.t.).
4. Regnskab og kontingentfastsættelse.
5. Valg af bestyrelse. **Jesper Hallas, Anna Birna Almarsdóttir og Flemming Hald Steffensen** træder ud af bestyrelsen. **Morten Andersen** sidder endnu en periode. Følgende personer stiller op til bestyrelsen: **Jens-Ulrik Rosholm og Jens Tølbøl Mortensen.**
6. Valg af revisor.
7. Samarbejde med Dansk Epidemiologisk Selskab.
8. Eventuelt

Yderligere oplysninger: Morten Andersen, Klinisk Farmakologi, IST, Syddansk Universitet, Winsløwparken 19, 5000 Odense C
Tlf. 65 50 37 91. E-mail: m-andersen@cekfo.sdu.dk

eller Anna Birna Almarsdóttir, Inst. for Samfundsfarmaci, DFH, Universitetsparken 2, 2100 Kbh. Ø.
Tlf. 35 30 64 52. E-mail: annalm@dfh.dk

ABSTRACTS TIL ÅRSMØDET 11/11-99

FEEDBACK ON PRESCRIPTION PROFILES. PRESENTATION OF TWO RANDOMISED CONTROLLED STUDIES.

Jens Søndergaard[1,2] MD
Research Unit of General Practice[1] and Clinical Pharmacology[2], University of Southern Denmark, Odense Campus

Background: There is only limited knowledge about the effects of sending prescription profiles to GPs. Also, the GPs' attitude towards this kind of intervention has not been examined.

Objective: To test the effects of different levels of clinical detailing in prescription profiles.
To test the importance of the topic on the effect on prescription profiles.
To test the effects of combining prescription profiles with guidelines.
To gain knowledge about the GPs' attitudes towards prescription profiles

Methods: Two randomised, controlled studies on prescription profiles were carried out by means of the OPED database, which covers all reimbursed medicine at the level of the individual user in the County of Funen (approx. 470.000 inhabitants).
All GPs (305) in the County of Funen participated in both trials. In the first trial, topics for intervention were polypharmacy and antiasthmatics. The GPs were randomised to one of three groups: a group receiving data on polypharmacy, a group receiving summarised data on antiasthmatics and a group receiving anonymised data on listed individual patients' consumption of drugs.
In the second trial, the topic for intervention was antibiotics. All GPs' received guidelines about prescription of antibiotics. The GPs were randomised to either an intervention group receiving feedback on prescription data or a control group.
The GPs' attitudes towards the intervention were recorded and qualitative interviews were conducted.

There will not be presented any final results.

PHARMACY BASED INTERVENTION PROJECTS

Hanne Herborg, Tove Gustafsson, Birthe Søndergaard. Pharmakon, Danish College of Pharmacy Practice

Background: Research and development in Danish pharmacies has in the 90'ies focused on the concept of pharmaceutical care. Pharmaceutical care is a continuous quality improvement function aimed at the drug use system. It focuses on inadequate managing of drug therapy, in particular failure to recognize and resolve drug related problems before they become morbidities. The hypothesis is that working with isolated factors is an inadequate approach to preventing drug related morbidities (therapeutic failure as well as adverse events). The overall purpose is to ensure optimal quality of life (clinical and psycho-social outcomes) for individual patients and health economic outcomes from the society perspective. All participants in the drug use system, including primary care actors such as GP's, pharmacists, nurses and the patients themselves are seen as essential resources.

Interventions: Two pharmacy based intervention projects have been carried out testing two different models of pharmaceutical care: a disease specific and a non-disease specific pharmacy based model. Both projects are part of multi-country European research programs.
1. Quality improvement of drug therapy for asthma patients in Denmark. The project ran for 12 months in 1994-95. It involved 500 asthma patients, 16 intervention and 15 control pharmacies in collaboration with 139 GP's. The patients had on average 10 encounters lasting 45 minutes.
2. Improving the well-being of elderly patients via community pharmacy based pharmaceutical care. The project ran for 18 months in 1997-98. It involved 524 patients receiving five or more drugs and aged >65 years. The patients had on average 6 encounters lasting 40 minutes.

In both projects the intervention consisted of individual counseling encounters where the pharmacist would monitor outcomes and drug related problems, provide individual action plans and patient education according to individual needs and wants, and if needed refer therapeutic problems to GP's.

Results: The asthma project showed beneficial effects on the following outcome measures: Asthma symptom status, days of sickness, quality of life, use of short acting Beta-agonists, use of inhaled Corticosteroids, knowledge and inhalation errors. Cost-effect ratios improved by a factor of five. Peak-flow and satisfaction did not show improvement relative to the control group.

The elderly project is currently being analyzed. Preliminary results show that intervention patients have significantly better quality of life and symptom scores, fewer problems with medicines, fewer contacts with GP's and decreased use of Benzoediazepines. Other indicators of drug use and knowledge, compliance and general satisfaction showed no difference between the groups. Satisfaction with information improved.

Conclusion: Comparing results from the two models it appears that the asthma model has worked as intended whereas the model for the elderly patients had less impact on drug therapy quality than anticipated.

OVER-THE-COUNTER CODEINE USE IN ICELAND: THE IMPACT OF INCREASED ACCESS.

Anna Birna Almarsdóttir† & Almar Grímsson‡
†Danmarks Farmaceutiske Højskole, Universitetsparken 2, 2100 København Ø, Danmark.
‡AL-BAS Ltd. Pharmaceuticals and Health Policy Consultancy Agency, Reykjavíkurvegur 66, 220 Hafnarfjordur, Island

Background: The objective of this study was to test the assumption that liberalising community pharmacy ownership in Iceland would lead to increased irrational use of over-the-counter pain relievers containing codeine.

Methods: Based on this assumption we built and tested a model using an interrupted time series design that contrasts the monthly sales data for over-the-counter pain relievers containing codeine before and after the legislation took effect.

Results: The total use of over-the-counter pain relievers containing codeine as well as those containing paracetamol and codeine has risen steadily throughout the period under study. The interrupted time series did not show a substantial effect from the legislative change on the use of all over-the-counter codeine pain relievers, paracetamol with codeine, and acetylsalicylic acid with codeine combinations.

Conclusion: The assumption that increased access leads to irrational use of over-the-counter medicines is not substantiated in the case of over-the-counter pain relievers containing codeine.

VERBAL AND WRITTEN INFORMATION TO TRIPTAN USERS. DESIGN OF A RANDOMISED, CONTROLLED TRIAL ON THE EFFECT ON CONSUMPTION

J. Sondergaard[1,2], M. Andersen[1], J. Kragstrup[2], B.O. Larsen[3], L.F. Gram[1], D. Gaist[4], S.H. Sindrup[5], H.U. Schaffalitzky de Muckadell[6] *[1]Clinical Pharmacology, University of Southern Denmark, Odense, Denmark.* *[2] Research Unit of General Practice, University of Southern Denmark, Odense, Denmark*
[3] Health Service Division, County of Funen, Odense , Denmark
[4] Epidemiology, University of Southern Denmark, Odense, Denmark
[5]Department of Neurology, Odense University Hospital, Odense, Denmark.
[6] Svendborg Lion Pharmacy, Svendborg, Denmark

Background: In 1992, sumatriptan was launched in Denmark as the first drug in a new class of drugs. The main indication is migraine and cluster headache. Pharmacoepidemiological studies have shown that a minority of the patients are responsible for a large proportion of the total use, and inappropriate use is common. One method in changing the use of drugs is giving information to the patients. However, only a very few valid trials on the subject have been carried out. Odense Pharmacoepidemiological Database (OPED) covers all reimbursed medicine at the level of the individual user. For each prescription, the brand, quantity, the patient's civil registration number, the form and quantity of the drug are recorded.

Aim: To develop and measure the effect of combined verbal and written information on inappropriate use of triptanes.

Method: All pharmacies in the County of Funen have been invited to participate in the study. The pharmacies are randomised to either a control or an intervention group. The staff at the pharmacies is invited to follow courses on migraine. A pamphlet on triptanes has been elaborated. The pamphlet will be handed out at the pharmacies and to the patients given additional verbal information on the subject. The core message is that if the patients have an inappropriate consumption, they should discuss it with their GP. The intervention is planned to last 3 months, with 6 months follow-up

Evaluation: Effect on individual consumption will be measured by means of OPED. In order to throw light on attitudes towards this kind of intervention, a questionnaire has been developed.

USE OF DRUG DATABASES - THE DANISH WAY

Pia Ehlers, Charlotte M. Ejlersen, Steinunn Gunnarsdottir, Jens Kierkegaard, Kim Kristensen, Bodil Munk Hansen, Bente O. Larsen, Kirsten Nielsen, Aase Nissen, Kirsten Schæfer, Birgit Toft, Keld Vægter. *)

Lægemidler er en væsentlig behandlingsteknologi i almen praksis. Det afspejler sig blandt andet i de kvalitetsudviklingsaktiviteter der er i gang i alle amter. Amtskonsulenterne indgår ofte i projektgrupper med praktiserende læger, hvor udarbejdet materiale om de enkelte lægers ordinationsmønstre indgår som en naturlig del af et projektforløb.
Brugen af de amtslige receptdatabaser til dokumentation af den faktiske ordinationsadfærd får de praktiserende læger til at reflektere over egne ordinationsvaner. Det kan dermed være med til at bane vejen for lægernes deltagelse i forskningsbaserede interventioner.

Der præsenteres forskellige eksempler på anvendelsen af data fra amternes receptdatabaser og de sammenhænge som anvendelsen foregår i:
- variationer i ordinationsniveau; sammenligning mellem amter (7 udvalgte ATC-grupper)
- analyse af den køn- og aldersstandardiserede udvikling i sygesikringens medicinudgifter
- guidelines; antibiotika
- medical audit; psykiske problemer i almen praksis
- brugerperspektivet; Ahormon-audit@ , spørgeskema til kvinder, borgermøder
- datalink mellem lægemiddelordinationer og andre aktiviteter; astma/lungefunktionsmåling
- ordinationsprofil for den enkelte praksis

Amtskonsulenterne har via kvalitetsudviklingsaktiviteter og det indbyrdes netværk en bred erfaring på lægemiddelområdet. De forskere med interesse for lægemiddelordinationer eller lægemiddelinterventioner, som endnu ikke har etableret forbindelse til amtskonsulentnetværket, inviteres til at kontakte os med henblik på gensidig inspiration og eventuelt samarbejde.

Amternes receptdatabaser
Apotekerne afleverer hver måned edb-registrerede oplysninger om samtlige receptekspeditioner til sygesikringen. I forbindelse med indlæsning af data i receptdatabasen tilføjes supplerende oplysninger om receptudsteder, lægemiddel og patient, således at der for hver receptekspedition er oplysning om:
- receptudsteder:ydernummer/sygehusafdelingskode, ydertype (fx. almen praksis), speciale
- lægemiddel : varenr., definerede døgndoser, pakningsstørrelse, dispenseringsform og pris
- patient: køn, alder, bopælskommune og bopælsamt

For recepter fra almen praksis om lægemidlet er ordineret til en patient tilmeldt receptudstederens praksis
I modsætning til Lægemiddelstyrelsens landsdækkende database er amternes receptdatabase valideret mht. bopælsamt og det er registreret om recepter udstedt af alment praktiserende læger er ordineret til patienter tilmeldt receptudstederens praksis. Til gengæld findes der i amternes receptdatabaser ingen individbaserede data, og for ikke-tilskudsberettiget medicin foreligger der overhovedet ingen patientoplysninger.

Amtslige puljer til kvalitetsudvikling, forebyggelse og lokal efteruddannelse i almen praksis
Siden 1. april 1995 er der i henhold til et overenskomstprotokollat for almen praksis og amterne afsat puljemidler (4,23 kr. pr. gruppe 1-sikret pr. år) til kvalitetsudviklingsarbejde, forebyggelsesaktiviteter og lokale efteruddannelsesaktiviteter. Denne finansieringsmulighed har bidraget til at øge aktiviteten på området.

Amtskonsulenter på lægemiddelområdet
*) En liste over samtlige amtskonsulenter/kontaktpersoner bliver udleveret på temadagen.

THE FIDELITY COEFFICIENT. A MEASURE OF THE COMPLETENESS OF INTERVENTION DATA

Jesper Hallas. Center for Klinisk Farmakologi, Syddansk Universitet, Odense.

Baggrund: Mange apoteker tilbyder interaktionsscreening og lignende ydelser. Effektiviteten af disse er afhængige af, om kunderne bruger samme apotek fra gang til gang. Tilsvarende overvejelser gælder lægernes muligheder for visse kvalitetsbetonede interventioner.

Metode: Trofasthedskoefficienten for en apotekskunde (thk-apo) er den andel af alle hans recepter, som indløses på det mest benyttede apotek. Tilsvarende kan en thk-yder defineres som den andel af en persons recepter, som er udskrevet af den mest brugte yder. Studiet tilstræbte at estimere thk-apo og thk-yder for befolkningen og at karakterisere variationen i thk. Datagrundlag var 2.8 millioner recepter registreret i OPED i 1998.

Resultater: Thk-apo var 91.6% og thk-yder var 87.8% i gennemsnit. Begge thk steg med alderen og var vidtgående uafhængigt af køn. Thk-apo faldt med stigende urbanisering. Den andel af lægemiddelforbruget, som ligger uden for mest brugte apotek og yder var karakteriseret ved hhv akutte tilstande og specialistbehandling. En analyse af warfarininteraktioner viste ofte samme apotek men ikke samme yder for interagerende præparater.

Konklusioner: Både apoteker og receptudstedere har godt datagrundlag for interventioner mod interaktioner. Analysen af warfarininteraktionerne tyder dog på, at thk næppe er den væsentligste determinant for optræden af interaktioner.

THE USE OF VIAGRA IN DENMARK

Bente Krag Ingvarsen, Ph.D and Claudia Ranneries, M.Sc.
Danish Medicines Agency, Copenhagen, Denmark

Background: Viagra, which is a new drug used for treatment of impotence, was introduced in Denmark October 5 1998. Since then Viagra has been prescribed to many men. The use of Viagra in combination with organic nitrates is contraindicated since it can lead to severe drops in blood pressure. The aim of this study was to evaluate 1) the use of Viagra among Danish men and 2) the number of men receiving both Viagra and organic nitrates during the analysis period.

Methods: Patient specific data on all prescriptions to men (aged 16-94 years) of Viagra alone and in combination with organic nitrates were obtained from the Register of Drug Statistics at the Danish Medicines Agency. The analysis period covered the 4th-quarter of 1998 and the 1st- and 2nd-quarter of 1999.

Results: The total turnover of Viagra during the analysis period was 20.6 Mio DKr. In the 4th-quarter of 1998 the turnover of Viagra was 8.6 Mio DKr. The sales decreased by 29 % to 6.0 Mio DKr in the 1st-quarter of 1999 and remained unchanged at 6,0 Mio DKr in 2nd-quarter of 1999.
13,903 men received Viagra in the 4th-quarter of 1998. 36% and 8 % fewer men received Viagra in the 1st- and 2nd-quarter of 1999, respectively. In total approximately 21,230 men received at least one prescription of Viagra during the analysis period. Viagra was predominantly prescribed to men aged between 55 and 64, followed by men aged between 65 and 74.
In the 4th-quarter of 1998 approximately 5 times as many men received Viagra as compared to other drugs against impotence. The difference was less pronounced in the 1st- and 2nd-quarter of 1999, where only 4 times as many men received Viagra contra other drugs against impotence. More men were treated for impotence in all three quarters of the analysis period as compared to the same quarters the year before (21,230 and 8,930 respectively).
Among the men receiving Viagra in the 4th-quarter of 1998 about 134 men also received at least one nitrate preparation. In the 1st- and 2nd-quarters of 1999 only 50 and 46 men, respectively, received both Viagra and organic nitrates. Other antihypersentive medications have been prescribed to men receiving Viagra, mostly ACE-inhibitors and calcium channel blockers. About 340 men received at least 3 different kind of antihypertensive medications in the 4th-quarter of 1998 decreasing to 174 and 155 in the 1st- and 2nd-quarter of 1999 respectively.

Conclusion: The total turnover of Viagra and the number of men receiving Viagra decreased from the 4th-quarter of 1998 to the 1th-quarter of 1999. While the turnover of Viagra remained unchanged in the 2nd-quarter of 1999 the number of men receiving Viagra decreased further in the 2nd-quarter of 1999.
The number of men receiving at least one prescription of medications used to treat impotence was greater in 4th-quarter of 1998 and the two first quarters of 1999 as compared to the same quarters the year before.
Despite being contraindicated men were prescribed both Viagra and nitrate preparations in the same quarter. However the number of men receiving both drugs in the same quarter decreased during the analysis period.

TIDLIGERE ANTIBIOTIKAKURE SOM RISIKOFAKTOR FOR ANTIMIKROBIEL RESISTENS BLANDT BAKTERIER I MELLEMØRET HOS 0-5 ÅRIGE BØRN

Nana Thrane, Charlotte Olesen, Henrik Toft Sørensen, Henrik Carl Schønheyder.
Center for Epidemiologisk Grundforskning, Aarhus Universitet; Den medicinske Forskningsenhed, Ringkøbing Amt; Klinisk mikrobiologisk afdeling, Aalborg Sygehus.

Baggrund: Undersøgelse af sammenhæng mellem antibiotikaforbrug og resistensmønster er vigtige, også i en population som den danske med lavt forbrug af antibiotika. Et stort antal studier i udlandet rapporterer deskriptive data vedrørende stigende hyppighed af resistente bakterier i mellemøret hos førskolebørn. Få studier sammenkæder oplysninger om individuelt antibiotikaforbrug og antimikrobiel resistens. Registre baseret på administrativt indsamlede oplysninger er billige og valide datakilder, som sikrer ensartet information gennem tidsperioder ved gentagne studier.

Materiale: Via cprnummer bliver oplysninger fra 'Laboratorieinformationssystemet, klinisk mikrobiologisk afdeling, Aalborg Sygehus', koblet med data fra 'Den farmakoepidemiologiske Receptdatabase, Nordjyllands Amt'. Studiepopulationen er 0-5 årige børn, som i perioden 1.4.1997-31.3.1999 fik foretaget deres 1. ørepodning i Nordjyllands Amt. For det enkelte barn er forbrug af systemisk antibiotika i perioden 2-90 dage før podning sat i relation til antimikrobiel resistens hos beta-lactamaseproducerende luftvejsbakterier, Hæmophilus influenzae (HI) og Branhamella catarrhalis (BC).

Formål: Formålet er 1) estimere risiko for resistens hos HI og BC i relation til antal antibiotikakure i perioden før podning og 2) undersøge sammenhæng mellem antibiotikatype og resistens hos HI og BC.

Resultater: 48% af de ialt 2144 børn med ørepodning havde modtaget mindst een antibiotikakur i den forudgående periode. 6,7% af HI bakteriestammerne var resistente for ampicillin. Odds ratio (95% CI), for resistens var 1,3 (0,7-2,5) hvis barnet havde fået 1 kur (reference= 0 recepter), 1,5 (0,7-3,4) ved 2 kure og 2,2 (0,3-19,1) ved 4 kure forud for podningen. Odds ratio for resistens var 2,9 (0,8-10,1) hvis barnet udelukkende havde fået bredspektret penicillin sammenlignet med børn som kun havde fået behandling med penicillin V i perioden.
91,2% af BC var resistente for penicillin. Alle stammer blandt børn med 3 og 4 kure var resistente.

Konklusion: Undersøgelsen viser en tendens til at antal af antibiotikakure har betydning for resistensudvikling hos det enkelte barn. Odds ratio øges med stigende antal kure, dog fandt vi ingen resistente stammer blandt børn med 3 kure. Behandling med bredspektret penicillin synes at inducere resistens hyppigere end smalspektret penicilin.

DO PREGNANT WOMEN USE DISPENSED MEDICATIONS? COMPARISON OF EXPOSURE DATA OBTAINED IN A PRESCRIPTION DATABASE AND BY INTERVIEW

Charlotte Olesen, Charlotte Søndergaard, Nana Thrane, Gunnar Lauge Nielsen, Lolkje de Jong-van den Berg, Jørn Olsen. The EuroMAP Group. The Danish Epidemiology Science Centre, University of Aarhus, The Medical Research Unit, Ringkjøbing County, Research Unit of Clinical Epidemiology, Aalborg Hospital, Denmark. Department of Social Pharmacy and Pharmacoepidemiology, Groninger Utrecht Institute for Drug Exploration (GUIDE), University of Groningen, The Netherlands.

Background: Non-compliance with prescribed medication is a well-known problem in clinical practice. Compliance proportions for prescribed medications are about 50%, and compliance may be lower among pregnant women due to fear of adverse fetal effects. Besides of limiting the therapeutical benefits, non-compliance may result in erroneous conclusions in studys where exposure information are based solely on prescription data.

Aims: To analyse; 1) compliance of drugs dispensed during pregnancy, 2) the proportion of exposed women who were captured by using The North Jutland Prescription Database (NJPD) as the only source of exposure, and 3) whether maternal age, smoking and drinking habits were predictors of compliance.

Methods: The NJPD was used to identify all prescriptions dispensed during pregnancy for 2041 women who were enrolled in the Danish National Birth Cohort (BICO) in the county of North Jutland, Denmark. Compliance was defined as the percentage of concordance between exposure in NJPD and BICO. The number exposed who were actually captured by using NJPD as the only source of exposure data was defined as $NJPD_{Capture.}$

Results: The overall compliance of drugs dispensed during pregnancy were 47% (95% CI; 43,50), ranging from 0 to 100% within ATC groups. The NJPD identified 19% of the exposures identified in BICO. However $NJPD_{capture}$ differed within ATC groups and over the counter drugs accounted for many of the "false negatives". Neither maternal smoking, drinking habits nor age were found to correlate with compliance in this study.

Conclusion: The overall compliance of prescribed drugs was low and women were exposed to many other drugs than those identified in NJPD. Our study indicates that for many drug groups, the computer-recorded prescription is an inadequate definition of exposure. NJPD and BICO provided complementary information and the combination improved the validity of exposure information obtained in both datasets.

YOUNG WOMEN'S USE OF SSRIs - FROM ONE STIGMA TO ANOTHER

Knudsen, Pia & Hansen, Ebba Holme. Royal Danish School of Pharmacy,
Department of Social Pharmacy, Universitetsparken 2, 2100 Copenhagen Ø, Denmark
Tel.: +45 35 30 64 47. Fax.: +45 35 30 60 50. E-mail: pini@mail.dfh.dk

Introduction: While the consumption of psychotropic drugs in general has declined, the use of SSRIs (Selective Serotonin Reuptake Inhibitors) has increased drastically since their introduction as a new generation of antidepressants in Denmark in 1986.Prescription statistics have shown a tendency towards a younger group of users and a less pronounced gender difference than seen in other groups of psychotropic drugs.
The concept of having an emotional condition has an unfavourable public image; moreover the treatment with psychotropic drugs also implies specific connotations. The word 'happiness-pill' has frequently been used about the SSRIs in the media and this might convey a stereotype image of the users.
In order to understand the mechanisms underlying the use, it is important to know how the users themselves view the medicine and their use and how they have developed this view. Research on this topic has to be carried out from a user perspective.
The reason for choosing young women in this study is that very little is known about this group of SSRI consumers although the group is growing.

Aim: The purpose of this study was to explore young women's perceptions of and attitudes towards SSRIs and through analysis identify themes which were found to be important in the use of SSRIs.

Sample: Inclusion criteria: Danish women in the age group between 18 and 34 who use SSRIs. Exclusion criteria: Hospitalisation at the time of the interview and misuse of psychotropic drugs.

Method: The informants were found through five pharmacies in the Copenhagen area. Based on prescriptions, the pharmacy identified potential participants and handed out a contact letter from the researcher. The women who wanted to participate then contacted the researcher and signed a letter of consent. Eleven semi-structured in-depth interviews were conducted and taped in the women's homes. Each interview lasted approximately one hour. The interviews were transcribed verbatim. All data was read thoroughly, then coded and themes identified. Further coding based on these themes was conducted making conceptual linkages. The project had ethical committee approval.

Findings: Among the themes identified were:
How the women experienced themselves before and after getting the prescription.
How they thought society looked upon their emotional condition and the medication.
How they managed information concerning their emotional condition and taking medicine.
Looking through these themes, a common underlying feature was a conception of stigmatisation[1]. Not only was the stigmatisation related to having an emotional condition but also to the use of antidepressants. A part of this feature was also in which way the women were handling this stigmatisation.

Conclusion: The deviation from what is considered normal in our society leaves the people using SSRIs with a stigma. This has an impact on the use.
The women accepted to take the medicine. Thereby they went from one stigma, connected to having an emotional condition, to another stigma that was easier for them to handle– namely the use of SSRIs.
The women were concealing both the condition and the medicine use from most people in their social circle. This was a result of the women's own anticipation of the stigma and the fear of the reactions if revealing it.

[1]Goffman, Erving (1963) *Stigma. Notes on the Management of Spoiled Identity.* Harmondsworth: Penguin.

POSTERPRÆSENTATION:

USE OF HORMONE REPLACEMENT THERAPY 1993 - 1998 IN FUNEN COUNTY, DENMARK. A PHARMACOEPIDEMIOLOGICAL INVESTIGATION OF UTILISATION AND COMPLIANCE

John Larsen[1,2], Jens Sondergaard[1,2], Morten Andersen[1], Department of Clinical Pharmacology[1] & Research Unit of General Practice[2], University of Southern Denmark, Odense, Denmark.

Background: Despite the well-established effect of hormone replacement therapy (HRT) on peri- and postmenopausal hormone deficiency sequelae (osteoporosis, cardiovascular disease and climacteric symptoms), HRT use seems to be sporadic and persistence with treatment low. Aim of this study was to describe the development of HRT use and compliance over the last six years.

Methods: All HRT prescriptions from 1993 through 1998 were retrieved from the Odense Pharmacoepidemiological Database (OPED), a prescription database covering 470,000 inhabitants (240,000 women) in 1995 in Funen, Denmark.

Results: Total consumption increased from 4,57 mio to 5,35 mio doses/year. Annual prevalence among females increased from 95.0 to 105.3/1,000/year, whereas the incidence decreased from 25.1 to 16.7/1,000/year. Mean age at start of treatment was 52.2 years, which was constant during the study period.
A five-year follow-up of persistence with HRT will be presented.

Discussion: Considering the rising evidence of the overall benefits of HRT it is surprising that the incidence decreased during the study period. This may be explained by the increased focus on the risk of long-term development of cancer and thromboembolic diseases. In light of the increased prevalence, however, duration of treatment seems to have increased during the observation period.