

Forskning og bruk av rutineanalyser for legemiddelmonitorering og farmakogenetikk

Bruk av rutineanalyser fra legemiddelmonitorering og farmakogenetikk til forskning

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Eksempler fra dagens praksis [ingen' guidelines]

(Psykofarmakologi) 4/5 Rusmidler 311

M A 6 07 09 0

Senter for Psykofarmakologi

Rusmidler 313

M C 4 75 88 0

Schizofreni

Legemiddelanalyse

Legemiddel (eng. navn)	Opptaksskjema (dosis)	Måling (mg)	Måling (mg)	Kvotient (mg)	Side dose (dosis)	Utdypning (U)
Zyprexa rettid	150 mg	150 mg	150 mg	1.0	150 mg	
Syprex a tbl	200 mg	200 mg	200 mg	1.0	200 mg	
Serquel tbl	200 mg	200 mg	200 mg	1.0	200 mg	
Ciprallex tbl	10 mg	10 mg	10 mg	1.0	10 mg	

LEGEMIDDELANALYSER

4 ml serum (dosis) - Standard, skiltefilter #	7 ml serum (dosis) - Standard, skiltefilter #
313 Amitriptylin (Sandoz, Tysstet)	765 Aup-panel (se bakside)
316 Bupropion (Waldby)	802 Amikisiprom/Clonidine
374 Clozapin (Cipram, Dabot)	802 Benzodiazepiner
376 Escitalopram (Eli Lilly)	804 Carbamazepin
377 Duloksetin (Pliva)	801 Clonidine
378 Fluoksetin (Eli Lilly)	806 Kofalin
379 Fluoksetin (Eli Lilly)	797 Zopiklon
380 Mianserin (Teva)	779 Bupropion (Sandoz, Sandoz, Tempus)
381 Mirtazapin (Eli Lilly)	808 Mianserin (Eli Lilly)
372 Nortriptylin (Norfem)	809 Mianserin (Eli Lilly)
382 Paroxetine (Eli Lilly)	803 Mirtazapin (Eli Lilly)
383 Sertralin (Janssen)	806 Naloxon
384 Venlafaxin (Eli Lilly)	807 Oxycodon
401 Amitriptylin (Sandoz)	808 Oxycodon
402 Amitriptylin (Sandoz)	809 Oxycodon
403 Amitriptylin (Sandoz)	810 Oxycodon
404 Amitriptylin (Sandoz)	811 Oxycodon
405 Amitriptylin (Sandoz)	812 Oxycodon
406 Amitriptylin (Sandoz)	813 Oxycodon
407 Amitriptylin (Sandoz)	814 Oxycodon
408 Amitriptylin (Sandoz)	815 Oxycodon
409 Amitriptylin (Sandoz)	816 Oxycodon
410 Amitriptylin (Sandoz)	817 Oxycodon
411 Amitriptylin (Sandoz)	818 Oxycodon
412 Amitriptylin (Sandoz)	819 Oxycodon
413 Amitriptylin (Sandoz)	820 Oxycodon
414 Amitriptylin (Sandoz)	821 Oxycodon
415 Amitriptylin (Sandoz)	822 Oxycodon
416 Amitriptylin (Sandoz)	823 Oxycodon
417 Amitriptylin (Sandoz)	824 Oxycodon
418 Amitriptylin (Sandoz)	825 Oxycodon
419 Amitriptylin (Sandoz)	826 Oxycodon
420 Amitriptylin (Sandoz)	827 Oxycodon
421 Amitriptylin (Sandoz)	828 Oxycodon
422 Amitriptylin (Sandoz)	829 Oxycodon
423 Amitriptylin (Sandoz)	830 Oxycodon
424 Amitriptylin (Sandoz)	831 Oxycodon
425 Amitriptylin (Sandoz)	832 Oxycodon
426 Amitriptylin (Sandoz)	833 Oxycodon
427 Amitriptylin (Sandoz)	834 Oxycodon
428 Amitriptylin (Sandoz)	835 Oxycodon
429 Amitriptylin (Sandoz)	836 Oxycodon
430 Amitriptylin (Sandoz)	837 Oxycodon
431 Amitriptylin (Sandoz)	838 Oxycodon
432 Amitriptylin (Sandoz)	839 Oxycodon
433 Amitriptylin (Sandoz)	840 Oxycodon
434 Amitriptylin (Sandoz)	841 Oxycodon
435 Amitriptylin (Sandoz)	842 Oxycodon
436 Amitriptylin (Sandoz)	843 Oxycodon
437 Amitriptylin (Sandoz)	844 Oxycodon
438 Amitriptylin (Sandoz)	845 Oxycodon
439 Amitriptylin (Sandoz)	846 Oxycodon
440 Amitriptylin (Sandoz)	847 Oxycodon
441 Amitriptylin (Sandoz)	848 Oxycodon
442 Amitriptylin (Sandoz)	849 Oxycodon
443 Amitriptylin (Sandoz)	850 Oxycodon
444 Amitriptylin (Sandoz)	851 Oxycodon
445 Amitriptylin (Sandoz)	852 Oxycodon
446 Amitriptylin (Sandoz)	853 Oxycodon
447 Amitriptylin (Sandoz)	854 Oxycodon
448 Amitriptylin (Sandoz)	855 Oxycodon
449 Amitriptylin (Sandoz)	856 Oxycodon
450 Amitriptylin (Sandoz)	857 Oxycodon

FARMAKOGENETISKE ANALYSER

BCPT
Basic & Clinical Pharmacology & Toxicology

VENLA-2227 (300-2000)
CIPRA-177 (20-120)
CLZ-2345 (300-200)
OLZ-137 (30-200)
ZUKCO-36 (5-35)

LEGEMIDDELANALYSER

Legemiddel (eng. navn)	Opptaksskjema (dosis)	Måling (mg)	Måling (mg)	Kvotient (mg)	Side dose (dosis)	Utdypning (U)
Legonex tbl	150 mg	150 mg	150 mg	1.0	150 mg	Dagen før 20 mg
Syprex a tbl	200 mg	200 mg	200 mg	1.0	200 mg	Dagen før 20 mg
Serquel tbl	200 mg	200 mg	200 mg	1.0	200 mg	Dagen før 20 mg
Ciprallex tbl	10 mg	10 mg	10 mg	1.0	10 mg	Dagen før 0.5 mg

LEGEMIDDELANALYSER

4 ml serum (dosis) - Standard, skiltefilter #	7 ml serum (dosis) - Standard, skiltefilter #
313 Amitriptylin (Sandoz, Tysstet)	765 Aup-panel (se bakside)
316 Bupropion (Waldby)	802 Amikisiprom/Clonidine
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379 Fluoksetin (Eli Lilly)	797 Zopiklon
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401 Amitriptylin (Sandoz)	808 Oxycodon
402 Amitriptylin (Sandoz)	809 Oxycodon
403 Amitriptylin (Sandoz)	810 Oxycodon
404 Amitriptylin (Sandoz)	811 Oxycodon
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413 Amitriptylin (Sandoz)	820 Oxycodon
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418 Amitriptylin (Sandoz)	825 Oxycodon
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420 Amitriptylin (Sandoz)	827 Oxycodon
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422 Amitriptylin (Sandoz)	829 Oxycodon
423 Amitriptylin (Sandoz)	830 Oxycodon
424 Amitriptylin (Sandoz)	831 Oxycodon
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428 Amitriptylin (Sandoz)	835 Oxycodon
429 Amitriptylin (Sandoz)	836 Oxycodon
430 Amitriptylin (Sandoz)	837 Oxycodon
431 Amitriptylin (Sandoz)	838 Oxycodon
432 Amitriptylin (Sandoz)	839 Oxycodon
433 Amitriptylin (Sandoz)	840 Oxycodon
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437 Amitriptylin (Sandoz)	844 Oxycodon
438 Amitriptylin (Sandoz)	845 Oxycodon
439 Amitriptylin (Sandoz)	846 Oxycodon
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448 Amitriptylin (Sandoz)	855 Oxycodon
449 Amitriptylin (Sandoz)	856 Oxycodon
450 Amitriptylin (Sandoz)	857 Oxycodon

FARMAKOGENETISKE ANALYSER

BCPT
Basic & Clinical Pharmacology & Toxicology

CIP-58nmol/2000
CLZ-1253 (300-200)
OLZ-170 (30-200)
QUET-196 (50-700)

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FHI
Folkehelseinstituttet

Søk i nettsidene til FHI

Meny

Forside > Nyheter fra FHI > 2017 > Ikke-dødelige sykdommer koster samfunnet mest

FORSKNINGSFUNN

Ikke-dødelige sykdommer koster samfunnet mest

Publisert 07.06.2017

Ikke-dødelige sykdommer, som psykiske lidelser og muskel- og skjelettplager, forårsaker høye behandlingstkostnader og mye tapt arbeidsdeltakelse, og koster dermed mer for samfunnet enn dødelige sykdommer. Dødelige sykdommer, som kreft og hjerte- og karsykdommer, fører også til høye behandlingstkostnader, men i langt mindre grad til tapt arbeidsdeltakelse. Det viser en ny studie fra Folkehelseinstituttet, Helsedirektoratet og to samarbeidspartnere.



Foto: Colourbox.com

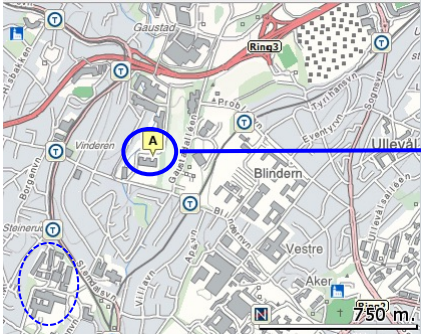

- Behandlingsresistens/svikt psykofarmaka: 20-60%
- Bivirkningsrespons: ??%





<https://www.nature.com/articles/s41380-021-01200-3>

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Senter for psykofarmakologi, Diakonhjemmet

[Anno 1926]

[Anno 2012]

- Lab (serumkons./genetikk)
- ~50-60 000 pasientprøver/år
- FoU
- Implementering
Undervisning
Rådgivning/tolkning

www.psykofarmakologi.no

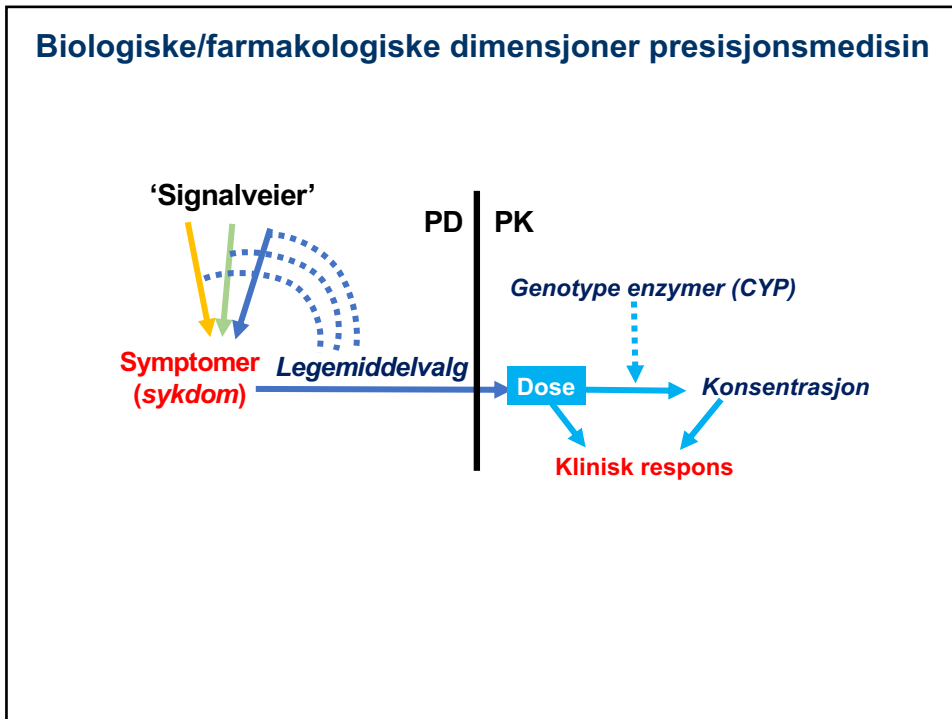
4

Senter for Psykofarmakologi Legemidler og farmakogenettikk			
Rekvirent Rekvirent ID: Rekvirent navn: Postadr.: Postnr./-sted: Ekstra svarbrev ønskes sendt til:	Pasient Fødselsnr. (11 siffer): Etternavn: Fornavn: Postnr./-sted: Prøvetaking (Dato/Kl./Sign.): Betales av: <input type="checkbox"/> Helse (publikk) <input type="checkbox"/> Institusjon (innlagt) <input type="checkbox"/> Bedrift/foretaksreise <input type="checkbox"/> Annet:		
Kliniske opplysninger. Spesifiser problemstilling:	Ikke _____ kg Høyde _____ cm Høst. myrefenkgan _____ Indikasjon for analyse: <input type="checkbox"/> Bivirkninger <input type="checkbox"/> Mangelfull effekt <input type="checkbox"/> Annet:		
Legemidler (ev. vedlegg)	Dato siste dose _____ Tidspunkt (kl.) _____ Morgentidspunkt _____ Middagstidspunkt _____ Kveldstidspunkt _____		
LEGEMIDDELANALYSER 0,5-1 ml serum (ikke gift)			
Antidepressiver <input type="checkbox"/> Amitriptylin (Saroten) <input type="checkbox"/> Bupropion (Wellbutrin) <input type="checkbox"/> Citalopram (Cipramil) <input type="checkbox"/> Escitalopram (Cipralox) <input type="checkbox"/> Duloksetin (Symbyald) <input type="checkbox"/> Fluoksetin (Fortox) <input type="checkbox"/> Fluvoxamin (Fevarin) <input type="checkbox"/> Klomipramin (Anafanil) <input type="checkbox"/> Mianserin (Tolvan) <input type="checkbox"/> Mirazapin (Remeron) <input type="checkbox"/> Nortriptylin (Nortren) <input type="checkbox"/> Paroksetin (Sereno) <input type="checkbox"/> Sertralín (Zoloft) <input type="checkbox"/> Tramipramin (Sarmontil) <input type="checkbox"/> Venlafaksin (Efexor) <input type="checkbox"/> Vortiooksetin (Brintellix)	Antipsykotika <input type="checkbox"/> Amissulprid (Solian) <input type="checkbox"/> Aripiprazol (Ablify) <input type="checkbox"/> Brexpiprazol (Rexulti) <input type="checkbox"/> Flupentixol (Fluanzol) <input type="checkbox"/> Haloperidol (Haldol) <input type="checkbox"/> Karipiprazol (Reagla) <input type="checkbox"/> Klorproksetin (Fronal) <input type="checkbox"/> Klozapin (Leponex) <input type="checkbox"/> Levomepromazin (Neozan) <input type="checkbox"/> Lurasidon (Latuda) <input type="checkbox"/> Olanzapin (Zyprexa) <input type="checkbox"/> Paliperidon (Xeplion) <input type="checkbox"/> Risperidon (Risperdal) <input type="checkbox"/> Serindol (Serindol) <input type="checkbox"/> Ziprasidon (Zeldox) <input type="checkbox"/> Zinkupentisikol (Coordinol)	Antiepileptika <input type="checkbox"/> Eskarbazepin (Zebinix) <input type="checkbox"/> Fenobarbital (Fenemal) <input type="checkbox"/> Fenitoin (Fenemoin) <input type="checkbox"/> Gabapentin (Neuronin) <input type="checkbox"/> Karbamazepin (Epilexol, Trimonil) <input type="checkbox"/> Klonazepam (Rivotril) <input type="checkbox"/> Lamotrigin (Lamictal) <input type="checkbox"/> Levetiracetam (Keppra) <input type="checkbox"/> Pregabalin (Lyrica) <input type="checkbox"/> Okkarbazepin (Trileptal) <input type="checkbox"/> Topiramet (Topimax) <input type="checkbox"/> Valproat (Prifin)	Benzodiazepiner <input type="checkbox"/> Benzodiazepiner screening <input type="checkbox"/> Alprazolam (Xanax) <input type="checkbox"/> Diazepam (Serenol, Valium, Vuval) <input type="checkbox"/> Flunitrazepam (Flunipam, Rohypnol) <input type="checkbox"/> Nitrazepam (Apodorm, Megadorm) <input type="checkbox"/> Okzazepam (Sobri) <input type="checkbox"/> Zolpidem (Sollinor) <input type="checkbox"/> Zopiklon (Imovane)
FARMAKOGENETISKE ANALYSER 1 EDTA eller Citrat-ør Gener som analyseres			
CYP-analyse <input type="checkbox"/> Enkelt(e) analyse(r):	Depresjon <input type="checkbox"/> SSRI-panel (citalopram (Cipramil), escitalopram (Cipralox), fluoksetin (Fortox), fluvoxamin (Fevarin), sereno (Sereno), sertralín (Zoloft)) <input type="checkbox"/> Venlafaksin (Efexor) <input type="checkbox"/> Bupropion (Wellbutrin) <input type="checkbox"/> TCA (amitriptylin (Saroten) og øvrige TCA) <input type="checkbox"/> Andre (duloksetin (Symbyald), mirazapin (Remeron), mianserin (Tolvan), vortiooksetin (Brintellix))		
Psykose <input type="checkbox"/> Aripiprazol (Ablify), brexpiprazol (Rexulti), haloperidol (Haldol), perfenazin (Trifalon), risperidon (Risperdal), serindol (Serindol), zinkupentisikol (Coordinol)	Epilepsi <input type="checkbox"/> Fenitoin (Fenemoin) <input type="checkbox"/> Lamotrigin (Lamictal)		
ADHD <input type="checkbox"/> Atomoksetin (Strattera)	Smerte <input type="checkbox"/> Opioid-panel (buprenorfin (Subutex/Pinex forte), tramadol (Nobligan), morfin (Dokostin) og øvrige opioider)		
Hjerte/kar <input type="checkbox"/> Marevan-panel (warfarin) <input type="checkbox"/> Statin-panel (atorvastatin (Lipitor), lovastatin, pravastatin (Pravachol), rosuvastatin (Crestor), simvastatin (Zocor)) <input type="checkbox"/> Clozapin (Fanva) <input type="checkbox"/> Metoprolol (Selo-Zok)	Andre <input type="checkbox"/> Abgaurinid (Zyloric) <input type="checkbox"/> Metadon <input type="checkbox"/> Tamokifen		

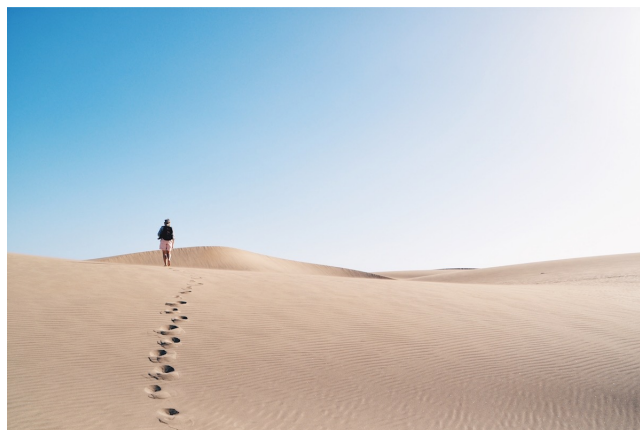
- Analyser for tilpasset dose
- Farmakogenettikk
- Konsentrasjonsmålinger
- Dosen må treffe målet
- Hva er målet?
- Biokjemi bak symptomer?
- Eldgamle hypoteser....



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precision psychiatry 2023 = persontilpasset dosering

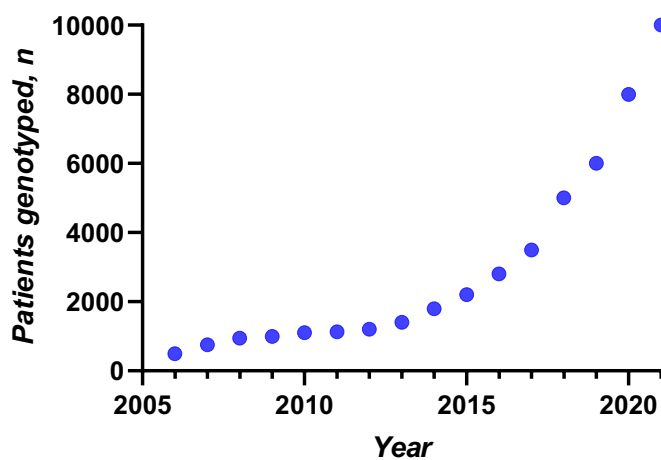
7

Boks 12 Farmakogenetikk – fra forskningsfront til fastlegeverktøy

Senter for psykofarmakologi ved Diakonhjemmet sykehus har i løpet av de siste 20 årene utviklet og innført farmakogenetiske analyser for presisjonsdosering av psykofarmaka hvert år.

De genetiske L dose til den er benyttes på tv for persontilpa for eksempel f som brytes ne

Den kliniske in fortolkning av Samlokaliserin miljø med nær forskningsresl



38

8

0,5-1 mL serum (ikke gel)

LEGEMIDDELANALYSER

Antidepressiver <input type="checkbox"/> Amitriptylin (Sarotex) <input type="checkbox"/> Bupropion (Wellbutrin) <input type="checkbox"/> Citalopram (Cipramil) <input checked="" type="checkbox"/> Escitalopram (Cipralex) <input type="checkbox"/> Duloksetin (Cymbalta) <input type="checkbox"/> Fluoksetin (Fontex) <input type="checkbox"/> Fluvoxamin (Fevarin) <input type="checkbox"/> Klomipramin (Anafranil) <input type="checkbox"/> Mianserin (Tolvon) <input type="checkbox"/> Mirtazapin (Remeron) <input type="checkbox"/> Nortriptylin (Noritren) <input type="checkbox"/> Paroksetin (Sercox) <input type="checkbox"/> Sertralín (Zoloft) <input type="checkbox"/> Trimipramin (Surmontil) <input type="checkbox"/> Venlafaksin (Efexor) <input type="checkbox"/> Vortiooksetin (Brintellix)	Antipsykotika <input type="checkbox"/> Amsulprid (Solian) <input type="checkbox"/> Aripiprazol (Ablify) <input type="checkbox"/> Brekspiprazol (Rxulti) <input type="checkbox"/> Flupentiksol (Fluanxol) <input type="checkbox"/> Haloperidol (Haldol) <input type="checkbox"/> Kariprazin (Reagila) <input type="checkbox"/> Klorprotiksen (Truxal) <input type="checkbox"/> Klozapin (Leponex) <input type="checkbox"/> Kvetsapin (Seroquel) <input type="checkbox"/> Levomepromazin (Nozinan) <input type="checkbox"/> Lurasidon (Latuda) <input type="checkbox"/> Olanzapin (Zyprexa) <input type="checkbox"/> Páliperidon (Koplon) <input type="checkbox"/> Perfenazin (Trilafon) <input type="checkbox"/> Risperidon (Risperdal) <input type="checkbox"/> Sertindol (Serdolect) <input type="checkbox"/> Ziprasidon (Zeldox) <input type="checkbox"/> Zuklopentiksol (Csordinol)	Antiepileptika <input type="checkbox"/> Eskikarbazeptin (Zebinix) <input type="checkbox"/> Fenobarbital (Fenemal) <input type="checkbox"/> Fenytoin (Fenatoin) <input type="checkbox"/> Gabapentin (Neurontin) <input type="checkbox"/> Karbamazepin (Tegretol, Trimonil) <input type="checkbox"/> Klonazepam (Rivotril) <input type="checkbox"/> Lamotrigin (Lamictal) <input type="checkbox"/> Levetiracetam (Keppra) <input type="checkbox"/> Okskarbazepin (Trileptal) <input type="checkbox"/> Pregabalin (Lyrica) <input type="checkbox"/> Topiramát (Topimax) <input type="checkbox"/> Valproát (Orfiril)	Benzodiazepiner <input type="checkbox"/> Benzodiazepiner screening <input type="checkbox"/> Alprazolam (Kanor) <input type="checkbox"/> Diazepam (Stesolid, Valium, Vival) <input type="checkbox"/> Flunitrazepam (Flunipam, Rohypnol) <input type="checkbox"/> Nitrazepam (Apodorm, Mogadon) <input type="checkbox"/> Oksazepam (Sobril) <input type="checkbox"/> Zolpidem (Stilnoct) <input type="checkbox"/> Zopiklon (Imovane)
Andre legemidler <input type="checkbox"/> Alimemazin (Vallergan) <input type="checkbox"/> Amfetamin (Attentin, Elvanse) <input type="checkbox"/> Atomoksetin (Strattera) <input type="checkbox"/> Litium (Lithonin) <input type="checkbox"/> Ritalinsyre (Ritalin, Equasym, Concerta)			

FARMAKOGENETISKE ANALYSER

1 EDTA- eller Citrat-rør

CYP-analyse	Gener som analyseres
<input checked="" type="checkbox"/> CYP-screening (CYP2C9, CYP2C19, CYP2D6) <input type="checkbox"/> Enkelt(e) analyse(r): <input type="checkbox"/> SSRI-panel (citalopram (Cipramil), escitalopram (Cipralex), fluoksetin (Fontex), fluvoxamin (Fevarin), paroksetin (Sercox), sertralín (Zoloft)) <input type="checkbox"/> Venlafaksin (Efexor) <input type="checkbox"/> Bupropion (Wellbutrin) <input type="checkbox"/> TCA (amitriptylin (Sarotex) og øvrige TCA) <input type="checkbox"/> Andre (duloksetin (Cymbalta), mirtazapin (Remeron), mianserin (Tolvon), vortiooksetin (Brintellix))	SLC6A4, CYP2D6, CYP2C19 CYP2D6, CYP2C19 CYP2D6, CYP2C19 CYP2D6
<input type="checkbox"/> Psykose <input type="checkbox"/> Aripiprazol (Ablify), brekspiprazol (Rxulti), haloperidol (Haldol), perfenazin (Trilafon), risperidon (Risperdal), sertindol (Serdolect), zuklopentiksol (Csordinol)	CYP2D6
<input type="checkbox"/> Epilepsi <input type="checkbox"/> Fenytoin <input type="checkbox"/> Lamotrigin (Lamictal)	CYP2C9 UGT1A4
<input type="checkbox"/> ADHD <input type="checkbox"/> Atomoksetin (Strattera)	CYP2D6
<input type="checkbox"/> Smerte <input type="checkbox"/> Opioid-panel (kodein (Paralgin/Pinex forte), tramadol (Nobligan), morfin (Dolcontin) og øvrige opioider)	CYP2D6, OPRM1, COMT
<input type="checkbox"/> Hjerte/kar <input type="checkbox"/> Marevan-panel (warfarin) <input type="checkbox"/> Statin-panel (rosuvastatin (Lipitor), lovastatin (Pravachol), rosuvastatin (Crestor), simvastatin (Zocor)) <input type="checkbox"/> Klopidogrel (Plavix) <input type="checkbox"/> Metoprolol (Selo-Zok)	CYP2C9, VKORC1 CYP3A4, CYP3A5, SLC01B1 CYP2C19 CYP2D6
<input type="checkbox"/> Andre <input type="checkbox"/> Allopurinol (Zyloric) <input type="checkbox"/> Metadon <input type="checkbox"/> Tamoksifen	HLA-B*58:01 CYP2B6 CYP2D6

Versjon: 06/2021

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Escitalopram – betydning CYP2C19-genotype

Impact of CYP2C19 Genotype on Escitalopram Exposure and Therapeutic Failure: A Retrospective Study Based on 2,087 Patients

Marin M. Jukić, Ph.D., Tore Haslemo, Ph.D., Espen Molden, Ph.D., Magnus Ingelman-Sundberg, Ph.D.

Genotype	Fraction of Patients Below 25 nM (%)
Null/Null	~55
Null/*1	~25
Null/*17	~25
*/*1	~20
*/*17	~45
*/*17	~55

Escitalopram Serum Concentration (nM) ranges: 2.5-5, 10 (standard), 15-20.

Fraction of Patients Below 25 nM (%)

Genotypes: Null/Null, Null/*1, Null/*17, */*1, */*17, */*17

Forskning og innovasjon til pasientens beste
 | Nasjonal rapport fra spesialisthelsetjenesten 2023 |

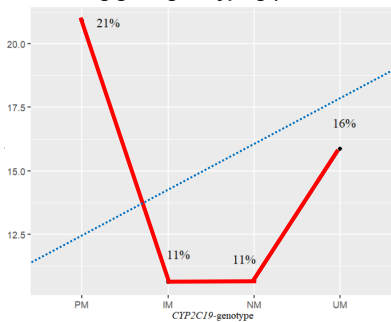
chad From
 ipressant (%)

10

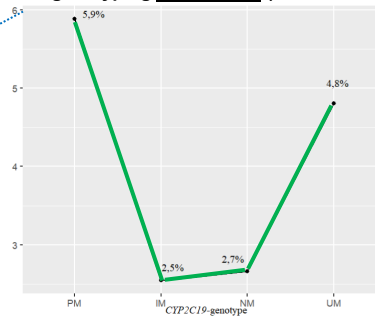
Har 'vår' implementeringen funket? ('mellommenneskelige' tiltak/tilbud)

Bytte escitalopram – betydning CYP2C19-genotype v. 2023 (n=4853)

Bytte escitalopram i relasjon til genotype uavhengig når genotyping (lavere enn 2018)



Bytte escitalopram i relasjon til genotype når genotyping før oppstart (ca. 70% reduksjon)

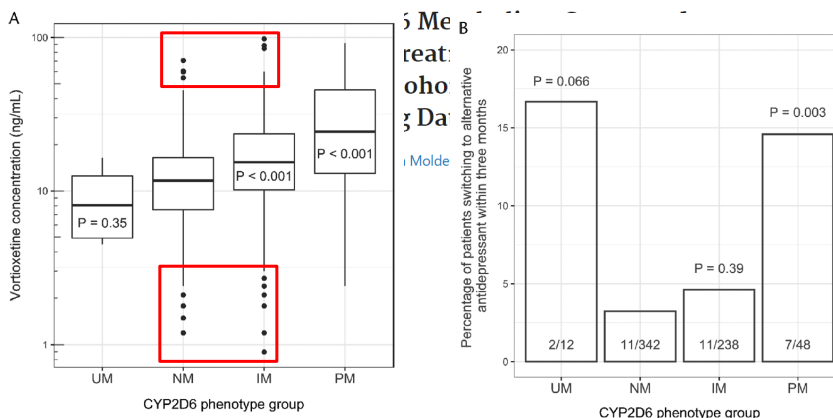


Unpublished data, Center for Psychopharmacology 2023

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Vortioxetin – betydning CYP2D6-genotype

> J Clin Psychopharmacol. 2022 Jul-Aug;42(4):396-399. doi: 10.1097/JCP.0000000000001563. Epub 2022 Jun 13.



Genotype-basert startdosering, legemiddelmonitorering for fin-tilpasning

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Research Article

Pharmacogenomics


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ORIGINAL RESEARCH

Pharmacogenomics and Personalized Medicine

Open Access Full Text Article

Independent Community Pharmacists' Experience in Offering Pharmacogenetic Testing

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Objective: This study assessed pharmacist experiences with delivering pharmacogenetic (PGx) testing in independent community pharmacies.

Methods: We conducted a cluster randomized trial of independent community pharmacies in North Carolina randomized to provide either PGx testing as a standalone service or integrated into medication therapy management (MTM) services. Surveys and pharmacist data about the delivery of PGx testing were collected. Semi-structured interviews were also conducted.

Conclusion: Dutch pharmacists are very positive toward PGx. However, test adoption is low and additional training is warranted.



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ORIGINAL ARTICLE

Implementation of pharmacogenetic testing in medication reviews in a hospital setting

Bodil Jahren Hjemås¹  | Katrine Bøvre¹ | Kathrin Bjerknes² | Liv Mathiesen² | Marte Christine Rognstad Mellingsæter³ | Espen Molden^{2,4} 

	Overall study population n = 46	Patients with gene-drug interactions identified n = 30
Hospital physician recorded information regarding pharmacogenetic testing in the patient hospital record, n (%)	26 (56.5)	21 (70.0)

What this study adds

- Using the logistics workflow presented in this study, pharmacogenetic test results were available for medication review during hospitalization for 40% of patients (median hospital stay 4.7 days).
- Actionable gene-drug interactions were most frequently detected for metoprolol (46% of total prescriptions), clopidogrel (45%) and atorvastatin (45%).
- The majority of the pharmacists' recommendations based on pharmacogenetic test results led to medication changes, which are expected to improve treatment outcome.

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Hovedpoenger

- Psykiatri: *persontilpasset behandling = dosetilpasning*
- Bruk av laboratoriedata til forskning
 - *kunnskap om genotype-basert startdosering*
- Klinisk implementering av farmakogenetiske analyser
 - *(spiss)kompetente farmasøyter*

