

정신과 약물의 대사 : 성과 관련된 주제

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ABSTRACT

Psychotropics Metabolism : Gender-Related Issues

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There are significant gender differences in pharmacokinetics and pharmacodynamics of psychotropic medications. Gender differences in pharmacokinetics such as drug absorption, bioavailability, drug distribution, drug metabolism, and elimination have clinical implications in terms of plasma levels, drug half-lives, side effects and toxicity. Women and men also show different pharmacodynamic response to a variety of drugs. Additionally female-specific issues such as pregnancy, menopause, oral contraceptive use and menstruation may also have profound effects on drug metabolism. These and other gender-related issues are considered in this article. Gender differences in drug metabolism have the potential to affect appropriate dosing, effectiveness and toxicity. Further research is needed to determine the scope and significance of these sex differences. (*Korean J Psychopharmacol* 2003;14(4):330-335)

KEY WORDS : Gender · Psychotropic metabolism.

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1) 가 .

2) 가 15% .

3. 분 포 (lean body mass) 가

4) 가 .

5) 가 .

6) cytochrome P450 isoenzyme CYP3A4 (bioavailability) 가

7) 가

8) 가

1. 약물의 제거 및 반감기(Clearance and Half-Life)

18%, 33%, 가 36%, 가 48% 가 ³⁾ (volume of distribution) (clearance)

2. 흡 수

(gastric acid) (gas- tric emptying)

⁴⁾

⁵⁾

(portal circulation)

4. 단백질 결합

1- acid glycoprotein (AAG), lipoprotein 3가

⁹⁾

AAG

lipoprotein corticosteroid binding globulin sex hormonebinding globulin transport protein ⁷⁾¹⁰⁾

5. 제거(Clearance) Rate) 3 (Glomerular Filtration Rate) 11) 가 12) digoxine 13) P - 450 14) ADH(alcohol dehydrogenase) 가 15) isoenzyme 16) CYP3A4 17) 3A4 40% 18) alprazolam, triazolam 가 19) CYP3A4 가 20) isoenzyme 1A2 cytochrome P450 4% 21) theophylline, imipramine, propranolol, estrogen fluvoxamine estrogen 22) CYP1A2 theophylline estradiol 23) P450 1A2 24) P450 1A2 25) CYP1A2 fluvoxamine 26) SSRI가 27) tacrine 28) estradiol levonorgestrel 29) Tacrine 30) CYP 1A2 1 - hydroxytacrine 31) Isoenzyme 2D6 fluoxetine, paroxetine, venlafaxine, mirtazapine, imipramine, nortriptyline, haloperidol, perphenazine 32) CYP2D6 fluphenazine, levopromazine, fluoxetine, norfluoxetine, paroxetine . 18) CYP2D6 debrisoquine 가 33) CYP2D6 progesterone 가

estrogen progesterone withdrawal 가 .²⁶⁾ volume of distribution 가 .
 isoenzyme 2C1 diazepam, estrogen progesterone CYP3A4
 propranolol, citalopram, TCA가 . gen progesterone CYP3A4
 diazepam (total and un- bound clearance) 가 .²⁷⁾ CYP1A2 carbamazepine (CYP1A2) 가
 mephenytoin, mephobarbital, piroxicam lithium 30~50% 가
 가 가 .²⁵⁾ CYP1A2 CYP3A4 lithium 가
 serotonin norepinephrine 가 .
 (upregulate) monoamine oxidase activity lithium 가
 .²⁸⁾ dopamine antipsychotics lithium 50%
 .²⁹⁾ TCA
 . CYP1A2 CYP3A4 가 .
 가 8 TCA 1.3~2.0
 CYP1A2 cloza- pine, fluvoxamine, caffeine 1.6 가 가 .³³⁾
 SSRI SNRI 가 .

7. 임신과 산욕기(Pregnancy and Postpartum)

(total body vo- lume), , 가
 trimester car- bamazepine valproic acid (neural tube defect) . Lithium
 Ebstein's anomaly가 가
 lithium 가 , trimester lithium, carbamazepine, valproic acid 가
 가 (volume of distribution) 가 .³⁰⁾ vo-

8. 생리주기(Menstrual Cycle)

estrogen progesterone (premenstrual syndrome) PMDD
 60% estrogen 가
 3~4 .³⁴⁾
 estradiol 가 serotonin 가 .³⁵⁾
 sertraline SSRI fluoxetine, citalopram, .²⁸⁾

9. 경구용 피임제

estrogen progesterone isoenzyme

Psychotropics Metabolism : Gender - Related Issues

가
 CYP3A4 가
 가 . St John's wort CYP3A4
 36)
 cimetidine
 CYP3A4 . carbamazepine, topiramate
 CYP3A4
 topiramate ethynyl estradiol 가
 36)
 Valproate sodium, gabapentin, lamotrigine, vigabatrin

가 36)
 분 문

가
 가
 가
 가

중심 단어 : (gender) (psychotropic metabolism).

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