

Psych Test

Specimen No: SAMPLE000.0-A12
Physician: Ima Test

DOB: 01/01/2000
Sex: MALE

Sample Collection: Jan. 01, 2021 08:00 EST
Sample Analysis: Jan. 04, 2021 08:00 EST

MEDICATION DOSAGE REFERENCE RANGE CRITICAL DDI*

IN THE MEDICAL RECORD:

MEDICATION	DOSAGE FREQUENCY	LOWER LIMIT	UPPER LIMIT	CRITICAL VALUE	DDI*
ACETAMINOPHEN Tylenol	325 mg PRN	Not Detected/PRN			▲
GABAPENTIN Neurontin	300 mg DAILY				▲
OXYMORPHONE Opana	8 mg PRN	Detected			▲
ZOLPIDEM Ambien	5 mg QHS	Not Detected			▲

NOT IN THE MEDICAL RECORD:

ARIPIPIRAZOLE Abilify	Not in medical record				▲
TRAMADOL Ultram	Not in medical record				▲

Reference Range:
Detected concentration inside

Within Range Out of Range

***Drug-Drug Interaction (DDI):** See details on the following pages.

- Major** - The use of these medications together is contraindicated. Rare exceptions may exist.
- Moderate** - The use of these medications together may be contraindicated in a select group of patients. The patient should be monitored for possible manifestations of the interaction.

MEDICATIONS NOT IN ASSAY:

LITHIUM (300 MG)

Medical record transcription accuracy is the responsibility of the ordering physician

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Interaction Details



TRAMADOL / GABAPENTIN: MODERATE

Evidence Level Established

Description

The risk or severity of CNS depression can be increased when Gabapentin is combined with Tramadol. Due to additive pharmacodynamic effects, the concomitant use of tramadol with other CNS depressants, such as the subject drug, may result in profound CNS depression.[L9257] This combination of agents may increase the risk of sedation, respiratory depression, coma, and death. [L9257]

Management

Reserve the combined use of tramadol with other CNS depressants for use in patients for whom alternatives are inappropriate. Limit the dosages and duration of treatment with concomitant CNS depressants to the minimum required. Patients should be monitored closely for signs and symptoms of excessive CNS depression.

References



TRAMADOL / OXYMORPHONE: MODERATE

Evidence Level Established

Description

The risk or severity of serotonin syndrome can be increased when Oxymorphone is combined with Tramadol. Tramadol has been implicated in the development of serotonin syndrome, [A173980,L9257] particularly in combination with other medications that can precipitate or contribute to serotonin syndrome, such as the subject drug. Symptoms of serotonin syndrome include altered mental status, neuromuscular abnormalities, and autonomic hypersensitivity.[A173980]

Management

If concomitant therapy with multiple serotonergic agents is necessary, the patient should be monitored carefully for the above signs and symptoms of serotonin syndrome, particularly during initiation of therapy and with any increases in dose. If serotonin syndrome is suspected, tramadol should be discontinued immediately.[L9257]

References

Beakley BD, Kaye AM, Kaye AD: Tramadol, Pharmacology, Side Effects, and Serotonin Syndrome: A Review. Pain Physician. 2015 Jul-Aug;18(4):395-400.



TRAMADOL / ZOLPIDEM: MODERATE

Evidence Level Established

Description

Tramadol may increase the central nervous system depressant (CNS depressant) activities of Zolpidem. Zolpidem is known to exert CNS depressant effects. Administering CNS depressants with zolpidem may lead to profound CNS depression due to additive effects [FDA label], [A175585]. In addition, "sleep-driving" and other complex behaviors may occur with zolpidem use while the patient is not fully awake. The risk of these behaviors increases with the use of other CNS depressants and alcohol [FDA label].

Management

Avoid co-administration with other CNS depressants. During concurrent use of a CNS depressant, dosage adjustments of zolpidem and the CNS depressant may be necessary due to the potential for additive effects. Do not use zolpidem with potent CNS depressants, such as hydrocodone. Some combinations may be contraindicated. Immediately evaluate any new onset behavioral changes when these agents are coadministered, and stop concurrent administration if complex behaviors are observed [FDA label], [L5584].

References

Shayegani R, Song K, Amuan ME, Jaramillo CA, Eapen BC, Pugh MJ: Patterns of zolpidem use among Iraq and Afghanistan veterans: A retrospective cohort analysis. PLoS One. 2018 Jan 23;13(1):e0190022. doi: 10.1371/journal.pone.0190022. eCollection 2018.

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TRAMADOL / ARIPIPRAZOLE: MODERATE

Evidence Level Established

Description

The risk or severity of serotonin syndrome can be increased when Aripiprazole is combined with Tramadol. Tramadol has been implicated in the development of serotonin syndrome, [A173980,L9257] particularly in combination with other medications that can precipitate or contribute to serotonin syndrome, such as the subject drug. Symptoms of serotonin syndrome include altered mental status, neuromuscular abnormalities, and autonomic hypersensitivity.[A173980]

Management

If concomitant therapy with multiple serotonergic agents is necessary, the patient should be monitored carefully for the above signs and symptoms of serotonin syndrome, particularly during initiation of therapy and with any increases in dose. If serotonin syndrome is suspected, tramadol should be discontinued immediately.[L9257]

References

Beakley BD, Kaye AM, Kaye AD: Tramadol, Pharmacology, Side Effects, and Serotonin Syndrome: A Review. Pain Physician. 2015 Jul-Aug;18(4):395-400.



OXYMORPHONE / ZOLPIDEM: MODERATE

Evidence Level Established

Description

Oxymorphone may increase the central nervous system depressant (CNS depressant) activities of Zolpidem. Zolpidem is known to exert CNS depressant effects. Administering CNS depressants with zolpidem may lead to profound CNS depression due to additive effects [FDA label], [A175585]. In addition, "sleep-driving" and other complex behaviors may occur with zolpidem use while the patient is not fully awake. The risk of these behaviors increases with the use of other CNS depressants and alcohol [FDA label].

Management

Avoid co-administration with other CNS depressants. During concurrent use of a CNS depressant, dosage adjustments of zolpidem and the CNS depressant may be necessary due to the potential for additive effects. Do not use zolpidem with potent CNS depressants, such as hydrocodone. Some combinations may be contraindicated. Immediately evaluate any new onset behavioral changes when these agents are coadministered, and stop concurrent administration if complex behaviors are observed [FDA label], [L5584].

References

Shayegani R, Song K, Amuan ME, Jaramillo CA, Eapen BC, Pugh MJ: Patterns of zolpidem use among Iraq and Afghanistan veterans: A retrospective cohort analysis. PLoS One. 2018 Jan 23;13(1):e0190022. doi: 10.1371/journal.pone.0190022. eCollection 2018.



OXYMORPHONE / ARIPIPRAZOLE: MODERATE

Evidence Level Established

Description

The risk or severity of adverse effects can be increased when Aripiprazole is combined with Oxymorphone. Concurrent administration of these agents can lead to various adverse events, including constipation, urinary retention, paralytic ileus, and sedation.[L10343] These symptoms result from the combined, additive adverse effects of both drugs.[A34378,A31486,A34380]

Management

Consider reducing the number/dose of anticholinergic agents and opioids used concomitantly to prevent additive effects. Closely monitor the patient and suspend the concomitant treatment if it is clinically warranted. Some combinations may be contraindicated. Consult individual product monographs for detailed dosing guidance/management.

References

Bell JS, Mezrani C, Blacker N, LeBlanc T, Frank O, Alderman CP, Rossi S, Rowett D, Shute R: Anticholinergic and sedative medicines - prescribing considerations for people with dementia. Aust Fam Physician. 2012 Jan-Feb;41(1-2):45-9. : Lieberman JA 3rd: Managing anticholinergic side effects. Prim Care Companion J Clin Psychiatry. 2004;6(Suppl 2):20-3. : Benyamin R, Trescot AM, Datta S, Buenaventura R, Adlaka R, Sehgal N, Glaser SE, Vallejo R: Opioid complications and side effects. Pain Physician. 2008 Mar;11(2 Suppl):S105-20.

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ARIPIPRAZOLE / ACETAMINOPHEN: **MODERATE**

Evidence Level Established

Description

The metabolism of Aripiprazole can be increased when combined with Acetaminophen. Aripiprazole is metabolized by CYP3A4 enzymes, therefore, concomitant administration of aripiprazole and its prodrugs with inducers of CYP3A4 of any strength is not recommended as the serum concentration of aripiprazole and prodrugs may be significantly decreased [F1189].

Management

Double the oral aripiprazole or aripiprazole prodrug dose and closely monitor the clinical response. Reduce the oral dose of aripiprazole to 10-15 mg/day if the inducer is discontinued. Avoid the use of CYP3A4 inducers for more than 14 days with extended-release injectable forms of aripiprazole or its prodrug.

References

Molden E, Lunde H, Lunder N, Refsum H: Pharmacokinetic variability of aripiprazole and the active metabolite dehydroaripiprazole in psychiatric patients. *Ther Drug Monit.* 2006 Dec;28(6):744-9. doi: 10.1097/01.ftd.0000249944.42859.bf. :: Azuma J, Hasunuma T, Kubo M, Miyatake M, Koue T, Higashi K, Fujiwara T, Kitahara S, Katano T, Hara S: The relationship between clinical pharmacokinetics of aripiprazole and CYP2D6 genetic polymorphism: effects of CYP enzyme inhibition by coadministration of paroxetine or fluvoxamine. *Eur J Clin Pharmacol.* 2012 Jan;68(1):29-37. doi: 10.1007/s00228-011-1094-4. Epub 2011 Jul 8.



ARIPIPRAZOLE / ZOLPIDEM: **MODERATE**

Evidence Level Established

Description

Aripiprazole may increase the central nervous system depressant (CNS depressant) activities of Zolpidem. Zolpidem is known to exert CNS depressant effects. Administering CNS depressants with zolpidem may lead to profound CNS depression due to additive effects [FDA label], [A175585]. In addition, "sleep-driving" and other complex behaviors may occur with zolpidem use while the patient is not fully awake. The risk of these behaviors increases with the use of other CNS depressants and alcohol [FDA label].

Management

Avoid co-administration with other CNS depressants. During concurrent use of a CNS depressant, dosage adjustments of zolpidem and the CNS depressant may be necessary due to the potential for additive effects. Do not use zolpidem with potent CNS depressants, such as hydrocodone. Some combinations may be contraindicated. Immediately evaluate any new onset behavioral changes when these agents are coadministered, and stop concurrent administration if complex behaviors are observed [FDA label], [L5584].

References

Shayegani R, Song K, Amuan ME, Jaramillo CA, Eapen BC, Pugh MJ: Patterns of zolpidem use among Iraq and Afghanistan veterans: A retrospective cohort analysis. *PLoS One.* 2018 Jan 23;13(1):e0190022. doi: 10.1371/journal.pone.0190022. eCollection 2018.

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ACETAMINOPHEN / ZOLPIDEM: **MODERATE**

Evidence Level Established

Description

The metabolism of Zolpidem can be increased when combined with Acetaminophen. Zolpidem is a substrate of the CYP3A4 enzyme, and its metabolism may be increased when administered with inducers of this enzyme. This may result in decreased zolpidem effects. A single-dose clinical interaction study using zolpidem tartrate 10 mg and rifampin 600 mg in female subjects demonstrated significant decreases of the AUC (-73%), Cmax (-58%), and T1/2 (-36 %) of zolpidem, with marked reductions in the pharmacodynamic effects of zolpidem tartrate. Rifampin, a CYP3A4 inducer, markedly reduced the pharmacodynamic effects of zolpidem.

Management

Use this combination with caution. A lower dose of the CYP3A4 inducer may be required when these agents are coadministered. The use of potent CYP3A4 inducers (including rifampin) with zolpidem is not recommended.

References

Hesse LM, von Moltke LL, Greenblatt DJ: Clinically important drug interactions with zopiclone, zolpidem and zaleplon. CNS Drugs. 2003;17(7):513-32. doi: 10.2165/00023210-200317070-00004.



ZOLPIDEM / GABAPENTIN: **MODERATE**

Evidence Level Established

Description

Gabapentin may increase the central nervous system depressant (CNS depressant) activities of Zolpidem. Zolpidem is known to exert CNS depressant effects. Administering CNS depressants with zolpidem may lead to profound CNS depression due to additive effects [FDA label], [A175585]. In addition, "sleep-driving" and other complex behaviors may occur with zolpidem use while the patient is not fully awake. The risk of these behaviors increases with the use of other CNS depressants and alcohol [FDA label].

Management

Avoid co-administration with other CNS depressants. During concurrent use of a CNS depressant, dosage adjustments of zolpidem and the CNS depressant may be necessary due to the potential for additive effects. Do not use zolpidem with potent CNS depressants, such as hydrocodone. Some combinations may be contraindicated. Immediately evaluate any new onset behavioral changes when these agents are coadministered, and stop concurrent administration if complex behaviors are observed [FDA label], [L5584].

References

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