May Pharmacy Newsletter

Dehydration in Arizona: Implications for Safe Use of Antipsychotics

In 2023, Maricopa County in Arizona experienced a record-breaking 645 heat-related deaths. This marked a 52% increase from the previous year. This surpasses previous yearly records since the county started tracking heat-related deaths in 2006. A report from Maricopa County indicates that most of these deaths occurred in July, the hottest month on record for Phoenix. A combination of Arizona heat and some medications can affect the ability of the body to regulate temperature.

Arizona's arid climate and high summer temperatures make dehydration a persistent and dangerous concern for patients, especially vulnerable populations such as the elderly, individuals with chronic illnesses, and those on medications that impair thermoregulation. Healthcare providers must remain vigilant in recognizing how environmental factors like extreme heat impact pharmacological treatments, particularly antipsychotic medications.

Antipsychotics, both typical and atypical, can significantly increase the risk of heat-related illnesses. Many of these medications interfere with the body's ability to regulate temperature through anticholinergic effects or by impairing hypothalamic function. This can inhibit sweating, reduce thirst perception, and lead to heat intolerance. In Arizona, where summer temperatures routinely exceed 100°F (38°C), this can quickly become life-threatening.

In addition to impairing thermoregulation, antipsychotics can exacerbate dehydration through other pathways. Some antipsychotic medications, such as clozapine or olanzapine, may cause sedation, reducing a patient's likelihood of maintaining adequate hydration. Others, such as risperidone, may induce hyperthermia or lead to neuroleptic malignant syndrome (NMS), a rare but potentially fatal condition exacerbated by dehydration.

Healthcare providers should proactively monitor patients on antipsychotics during periods of intense heat. This includes regular assessment of hydration status, electrolyte balance, and temperature regulation. Particular caution should be taken with elderly patients, those with impaired mobility, or individuals who may not reliably communicate thirst or discomfort.

Education is also critical. Patients and caregivers should be informed about the signs of dehydration, such as dry mucous membranes, decreased urine output, fatigue, and confusion. Encourage gentle reminders regarding the importance of regular fluid intake, even in the absence of thirst. Clinicians should also consider seasonal medication reviews, especially in the spring, to assess the ongoing need for high-risk medications and explore potential dose adjustments or safer alternatives during hot weather months.

In facilities such as psychiatric hospitals, group homes, and assisted living centers, implementing heat response protocols is essential. This may include scheduled hydration checks, limiting outdoor activity during peak heat hours, and ensuring that cooling measures are available and accessible.

Psychiatric Medications That May Increase Risk of Harm on Hot Days

Mood stabilizer such as Lithium may be affected by mechanism diabetes insipidus induced water loss and risk for fainting and or falls. Patients may experience electrolyte imbalance. There is a risk for toxicity in setting of dehydration because of the narrow therapeutic index of the drug.

Antipsychotics such as haloperidol, olanzapine, quetiapine, and risperidone may impair sweating and impair body temperatures.

Selective Serotonin Reuptake Inhibitors (SSRI) i.e.: fluoxetine and sertraline and Serotonin and Norepinephrine Reuptake Inhibitors (SNRI) i.e., duloxetine and venlafaxine all increase sweating.

Tricyclic antidepressants (TCAs) i.e.: amitriptyline and clomipramine decrease sweating.

Antiseizure medications which are used in behavioral health treatments i.e.: topiramate decreases sweating. Oxcarbazepine increases sweating and urination. Carbamazepine may cause dizziness and weakness especially after increased dose.

In addition, drugs of abuse may also increase the risk of heat related issues. Stimulants like cocaine and hallucinogens i.e.: methylenedioxy-methamphetamine (MDMA) (and alternatives), reduce sweating and reduce dilation of skin blood vessels and impair heat perception. Amphetamine and methylphenidate increase body temperatures. Alcohol increases sweating and urination and impairs het perception.

In conclusion, antipsychotic medications remain a cornerstone of treatment for many psychiatric conditions, but in the context of Arizona's climate, they require special attention. Healthcare providers must recognize the compounded risks posed by dehydration and implement vigilant, proactive strategies to ensure medication safety. A climate-informed approach to psychiatric pharmacology is not just best practice, it is essential for safeguarding the well-being of vulnerable populations in high-heat regions.

References:

1. https://www.psychiatrist.com/pcc/a-model-of-medication-adherence-in-schizophrenia/
2. https://cronkitenews.azpbs.org/2025/04/03/older-adults-taking-medication-higher-heat-risks-summer-dangerous/
3. https://www.cdc.gov/heat-health/hcp/clinical-guidance/heat-and-medications-guidance-for-clinicians.html

PREFERRED DRUG LIST UPDATES CAN BE FOUND HERE:

ACC-RBHA, DD, ALTCS and DCS CHP	Behavioral Health (Non-Title 19/21)

** Drugs that are not on the formulary will require a PA (prior authorization) request to be submitted**

Reminder for quicker determinations of a Prior Authorization use the ePA link for Our Providers: Please click here to initiate an electronic prior authorization (ePA) request.

This newsletter is brought to you by the Mercy Care Pharmacy Team. For questions, please email Fanny A Musto (MustoF@mercycareaz.org), Denise Volkov (VolkovD@mercycareaz.org) or Trennette Gilbert (gilbert@mercycareaz.org)