FDA Information on Medication Errors Involving Activase and TNKase

US Food and Drug Administration (FDA) has been notified of medication errors involving Activase and TNKase due to the use of the abbreviations "TPA" and "TNK".

Activase, the brand name for alteplase, is a tissue plasminogen activator that FDA approved in June 1996. Activase is indicated for the management of acute myocardial infarction, acute ischemic stroke, and acute massive pulmonary embolism. A second and third tissue plasminogen activator Retavase and TNKase were FDA approved later in 1996 and in 2000. The generic name for Retavase is reteplase and the generic name for TNKase is tenecteplase. Both Retavase and TNKase are only indicated for the management of acute myocardial infarction, and are not FDA approved for acute ischemic stroke or pulmonary embolism.

"TPA" is the abbreviation commonly used for the drug class that encompasses all tissue plasminogen activators. However, healthcare professionals sometimes use "TPA" to refer to Activase because it was the first tissue plasminogen activator approved. Since all three drugs - Activase, TNKase, and Retavase - are tissue plasminogen activators, referring to any one of these products as "TPA" may lead to confusion regarding the intended product. Furthermore, other abbreviations are also occasionally used in published literature when referring specifically to Activase, heightening the potential for confusion.[1]

Background

FDA has received 21 cases of wrong drug errors associated with TNKase between 2000 and June 2014. In the June 2014 case, the wrong drug error involved a stroke patient who received TNKase instead of the intended Activase. This error was attributed to nursing error and confusion between the abbreviations "TNK" and "TPA". Although not all error cases specified a root cause, 4 cases in which stroke patients were given TNKase instead of the intended Activase *did* provide the detail that the prescription order was written as "TPA". Additionally, 2 cases reported that the prescription order was verbally ordered as "TNK". Although the complete drug name is TNKase, healthcare professionals sometimes use the shortened abbreviation "TNK". This is problematic because "TNK" can be confused as "TPA". In fact, the abbreviation "TNK" is listed on The Institute for Safe Medication Practices' List of Error-Prone Abbreviations, Symbols, and Dose Designations.[2] Additionally, The Institute for Safe Medication Practices published an article this year regarding this confusion between Activase and TNKase[3].
Because the dose for Activase is often higher than the maximum labeled TNKase dose, TNKase overdose may occur if a patient inadvertently receives TNKase instead of Activase. An overdose of TNKase may increase the risk of intracranial hemorrhage, retroperitoneal bleed, extended hospitalization, and death.

Recommendations

- Do not use the abbreviation "TPA" to prescribe the drug product Activase. Use either the brand name of the drug product Activase or the

References

[1] Scott PA, Davis LA. Do not substitute: IV thrombolytic selection errors in acute stroke. Stroke. 2001 Feb;32(2):580-3.

[2] ISMP's List of Error-Prone Abbreviations, Symbols, and Dose Designations [Internet]. Horsham (PA): Institute for Safe Medication Practices. 2013 [cited 2014 Nov 12]. Available from: http://www.ismp.org/tools/errorproneabbreviations.pdf.

generic name Alteplase on written prescriptions and verbal orders.

- Do not use the abbreviation "TNK" to prescribe TNKase. Use either the full brand name of the drug product TNKase or the generic name Tenecteplase on written prescriptions and verbal orders.
- Remove the abbreviation TPA" from all standardized order sets and treatment protocols to avoid confusion.
- Do not use the abbreviation"TPA" when publishing medical literature or clinical guidelines.

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