Solid state characteristics of bedaquiline benzoate

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Bedaquiline was approved for the treatment of multi-drug-resistant tuberculosis in 2012. Understanding the solid-state properties of the benzoate salt opens the potential for manufacturing it as a new molecular entity. There have been some communications on crystal salts of bedaquiline; this work provides more insight into the characterization of the benzoate salt. The salt was formed from a 1:1 ratio of 30mg (0.054 millimoles) bedaquiline and the millimole equivalents, 6.6mg of benzoic acid. Single crystal structures were determined at 150 K using Bruker Quest X-ray diffractometers using either Mo K⍰ (λ = 0.71073 Å) or Cu K⍰ radiation (λ = 1.54178 Å). The sample was analyzed by PXRD, and the structure was confirmed by Rietveld analysis against the single crystal. Sorption potentials for the salt were determined at 75% and 0% relative humidity (RH), while accelerated stability was conducted at 40oC and 75% RH. Thermal analysis was conducted using melting point, DSC, and TGA. The waterer content of the hydrate benzoate was by KF titrations. Bedaquiline benzoate occurs as a monocation protonated selectively at the dimethyl amine substituent., the less basic quinoline N atoms remain unprotonated. It occurs as either a 1.17 hydrate or a monohydrate acetonitrile solvate. The chemical formula was C32 H32 Br N2 O2, C7 H5 O2, 1.166(H2 O), Molecular weight 698.7g. Rietveld's analysis confirmed the benzoate salts. The DSC thermograph value was comparable to the melting point determination. KF determination shows it contained 3.33% water, comparable to the TGA results, loss of ~3.1%. The salt was stable and nonhygroscopic for 3 months.

Biography

Mercy Amaka Okezue is a postdoc research associate in the Industrial and Physical Pharmacy department at Purdue University, West Lafayette, IN. Simultaneously, she works as a regulatory officer with Nigeria's foods and drugs regulatory authority, NAFDAC. A fellow of the West African Post Graduate College of Pharmacists (2010), Dr. Okezue also has an MS degree in BIRS from Purdue (2016). Currently, she is working on a laboratory-based assessment of the quality of some products that have a high history of recalls in a US FDA Project (Assessment Tools for Surveillance and Monitoring of Real-World Data Systems and Processes to Ensure Product Quality). Also, developing solid nanoparticles for the bedaquiline salts to further improve their solubility.

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Pharmaceutical treatment of obesity

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Although the treatment of obesity with a healthy dietary intervention can have long-term results, this seems to happen only in a small patient population, mainly due to adaptive changes in appetite regulation mechanisms that ultimately lead to increased food intake. Regarding the pharmaceutical treatment of obesity, various medicinal substances have been tested in recent decades, most of which have been withdrawn from the market due to adverse effects. Indications for administration of anti-obesity drugs are: BMI ≥30 kg/m2 or BMI ≥27kg/m2 with comorbidity related to obesity, such as type 2 diabetes mellitus (T2DM), arterial hypertension, fatty infiltration, etc. Currently, three medicinal preparations have official approval in Europe for the treatment of obesity, i.e., orlistat, liraglutide, burpopion/naltrexone, and several substances are being tested in clinical trials that hopefully soon will enter the market. The purpose of this speech is to describe the pharmaceutical treatment of obesity, current and future perspectives.

Biography

Sofia Konstantinidou is the Head of clinical pharmacy department at Athens Medical Centre, Greece. She is also a PhD Candidate in Clinical Pharmacology- Metabolic Syndrome and Obesity, at Athens Medical School of the National and Kapodistrian University of Athens, in 'Cardiovascular and Metabolic Effects of Obesity Drugs'. She holds an MSc in Clinical Pharmacy, International Policy and Practice from UCL of London and an MPharm degree (1st Class Honours) from King's College London. She has been an invited speaker in several international scientific conferences and published more than 15 papers in peer-reviewed journals. Moreover, she has been a reviewer in international journals.

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CT Angiography vs Angiogram

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Background: In the diagnosis of obstructive coronary artery disease (CAD), computed tomography (CT) is an accurate, non-invasive alternative to invasive coronary angiography (ICA). However, the comparative effectiveness of CT and ICA in the management of CAD to reduce the frequency of major adverse cardiovascular events is uncertain.

Methods: We conducted a pragmatic, randomized trial comparing CT with ICA as initial diagnostic imaging strategies for guiding the treatment of patients with stable chest pain who had an intermediate pretest probability of obstructive CAD and were referred for ICA at one of 26 European centers. The primary outcome was major adverse cardiovascular events (cardiovascular death, nonfatal myocardial infarction, or nonfatal stroke) over 3.5 years. Key secondary outcomes were procedure-related complications and angina pectoris).

Conclusion: Among patients referred for ICA because of stable chest pain and intermediate pretest probability of CAD, the risk of major adverse cardiovascular events was similar in the CT group and the ICA group. The frequency of major procedure- related complications was lower with an initial CT strategy.

CT angiography vs angiogram: The main difference between the two procedures is that while a standard angiogram involves a catheter being inserted into the artery and to the area being studied, a CT angiogram does not require the insertion of a catheter. A significant advantage of a CT angiogram over a traditional angiogram is that a CT angiogram is non-invasive.

Conclusion: A CT angiogram and a traditional angiogram are both effective imaging tests in diagnosing conditions relating to the heart and blood vessels. However, many will favor the non-invasive option of a CT angiogram, which is fast, convenient, and relatively painless. A CT angiogram is very accurate in detecting CHD in patients and almost as accurate as a traditional angiogram, allowing doctors to make decisions such as ruling out CAD in patients with a low-to-medium risk of disease. CT scans are already the preferred method of choice for patients with a pretest probability for CHD of 50% or lower. And with the recent introduction of ultrahigh-resolution CT scanners, it could only be a matter of time until conventional invasive angiograms are slowly filtered out and replaced entirely by CT scanners, due to their accuracy, convenience, and development in spatial resolution.

Biography

I am Madhuja Nath Graduated from Tver State Medical University, Russia. After that I have worked in various multispeciality hospital in both Public and private sector. Upon gaining significant amount of experience in India, I migrated to UK, now working in NHS as CT1 , in Department of Medicine.

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Drug chart-quality improvement project

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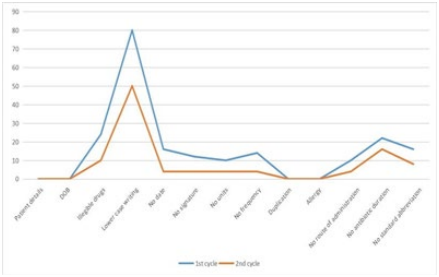
Aim of audit:

1. To identify compliance of drug chart writing with BNF guidelines
2. To identify most common errors of prescription writing

Analysis of first and second cycle:



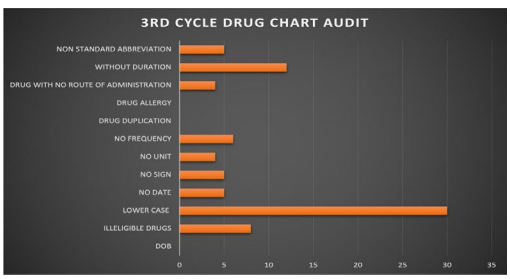
Action plan after 1st cycle: (APRIL-2022)

- Messaging in the junior doctor's group and highlighting the common errors according to our analysis and requesting them to incorporate the improvement in their day to day practice.
- Discussing with colleagues about result of the analysis and encouraging them to minimize the error.

Action plan after 2nd cycle

Discussing about the analysis with the AMU doctors as majority of the patients are first admitted in the AMU so that the common errors of drug chart writing can be avoided.

Emailing all doctors working in the trust to follow the standard guideline while writing the drug chart.



JUNE-JULY

SUMMARY

This QIP comprises of 3 cycles.

The action plans recommended have been practically implemented in day-to-day practice.

The aim was to help maximum number of doctors follow the bnf guidelines while writing the drug charts, we believe we have been able to achieve that.

The third cycle shows significant improvement as compared to the first cycle.

The limitations that we need to bear in mind are there is always a scope for manual error, hence 100% improvements are difficult to obtain.

The third cycle marks the end of this QIP.

Biography

I am Dr.Madhuja Nath , Graduated From Tver State Medical University Russia. After that I have worked in various multispeciality hospital, in both Public and private sector. Upon gaining significant amount of experience in India, I migrated to UK , now working in NHS as CT1 , in Department of Medicine.

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