Expert Opinion for Joe Doe

Joe Doe, a pleasant 53-year-old female with history of breast cancer status post Adriamycin therapy with subsequent nonischemic cardiomyopathy in 20XX with depressed LVEF of 32, repeat echo was showing LVEF of 26% on 06/29/20XX despite being on Acei and carvedilol. She subsequently had a stress test that showed infarct, but no ischemia with LVEF of 18% and also experienced several episodes of ventricular fibrillation at home, total of 3 treated episodes of polymorphic VT and ventricular fibrillation at home necessitating an ICD shock. Two episodes were terminated by 1 round of ATP, one episode was terminated via ICD therapy and one was self-terminating, a total 4 episodes. This was over the course of time since 09/03/20XX.

She subsequently was seen by Dr. Alsheikh on 10/12/20XX at Fort Walton office. She denied any recurrent anginal symptoms. No congestive heart failure symptoms. No syncope or near syncope. She was not aware when it happened, it appears she was sleeping. She has been going to work and has been doing well. She was evaluated by Dr. Alsheikh, and was referred for Tikosyn admission.

She was referred for Class III anti—arrhythmic medication loading, sotalol was dosed. Her EKG in the office was notable for QTc of 412 and this was on 10/12/20XX with normal PR, normal QRS, and nonspecific ST changes. She was slightly tachycardic, heart rate of 100 with several PVCs that were noted. She subsequently was written for sotalol 120 mg b.i.d. and dose was delivered.

After the administration of sotalol she has experienced an ICD shock. She had 1 ICD shock followed by 20 minute interval and 2 back to back ICD shocks and subsequent loss of consciousness. Review of her EKG showed a QT 455 with a QTc 530. Post sotalol, EKG done 2 hours later showed no significant change in the calculated QTc from 530 to 539. She was a little bit more bradycardic with a heart rate of 64 from 82.

Her telemetry was notable for an episode of polymorphic PVCs, setting of long and short sequences in setting of bradycardia that appeared to result in an episode of ventricular fibrillation. After the second shock, she was given 150 mg IV amiodarone as part of the code since she lost consciousness. No CPR was done. She quickly regained her consciousness. She was then transferred to the unit and started on lidocaine drip. Her QTc was prolonged and she did not really qualify for the sotalol. Sotalol was withheld and she was transferred to Baptist Hospital for further evaluation of ischemia contributing to the ventricular fibrillation and prolonged QTc.

Upon reviewing the above sequence of medical events, I find that the physician negligently administered sotalol for Joe Doe. It is noteworthy that the patient

support@dainfotech.com 616-228-0677

had prolonged QTc and she was already on Tikosyn (dofetilide). Both these conditions are not favourable for Sotalol dosing.

If a patient is already on a Class III antiarrhythmic drug, concomitant use of another Class III drug should be avoided due to additive effect. Concomitant use of these drugs has the potential for additive effects on myocardial refractoriness. It should be emphasised that dofetilide can cause prolongation of the QT interval, thus concomitant use of another Class III antiarrhythmic drug has the potential to increase the risk of ventricular arrhythmias such as ventricular tachycardia and torsade de pointes.

In some patients, there may be compelling need to switch over to Sotalol, instead of Tikosyn. If such a clinical scenario arises; then it is important to withhold Tikosyn for 30 – 40 hours before administering Sotalol. The terminal half-life of Tikosyn is approximately 10 hours. Hence it is important to give a washout period of least 30 hours before starting Sotalol. In Joe Doe's case, appropriate washout period was not given and QTc prolongation was not verified prior to start of Sotalol.

It is for the above reasons, I'm of the opinion that physician was negligent in dosing Sotalol for Joe Doe. I also find that the attending physician failed to verify the QTc prolongation prior to dosing Sotalol. The medication error resulted in ventricular fibrillation that led to ICD shocks in this case.

****

support@dainfotech.com 616-228-0677