



Dr. Conroy noted that tests should be run to rule out a possible myocardial infarction (heart attack).

{¶3} At approximately 5:25 a.m., before Beatrice was taken to the eighth floor cardiac unit for admission, Irma Melfof, RN, administered Azithromycin to Beatrice. After the medication was administered, Beatrice became restless and complained of being hot. At 5:45 a.m., Beatrice arrived on the eighth floor; between 5:55 and 6:00 a.m., Beatrice went into cardiac arrest and a "code blue" was called. Beatrice was in a coma for more than two weeks and ultimately died. Plaintiff contends that Beatrice died as a proximate result of the improper administration of Azithromycin and defendant's failure to diagnose and treat her allergic reaction to the drug.

{¶4} Defendant contends that the medication was administered properly, that Beatrice did not have an allergic reaction, and that the cause of her death was a myocardial infarction (MI).

{¶5} Plaintiff testified that he lived with Beatrice; that she had no known drug allergies; that she had smoked for 20 to 25 years and that she was taking 8 to 10 different medicines to treat her various illnesses. He further testified that nurse Melfof administered Azithromycin to Beatrice via injection from a large syringe directly into a heparin well (a device with multiple ports used to accept intravenous medications) that had been placed in a vein in her right arm. Plaintiff recalled that after the injection, Beatrice complained of being hot and that she became restless. However, he stated that she did not complain of pain or swelling in her right arm and that he did not notice any rash on her arm.

{¶6} Plaintiff also testified that no bag of intravenous (IV) fluid was connected to the heparin well when Beatrice was taken to the eighth floor and that he could not remember whether she was transported with a portable cardiac monitor when she was admitted to the eighth floor.

{¶7} Dr. Khandelwal testified that he was the attending physician in the ER; that he had prescribed Azithromycin "P.O." (orally), but then crossed out the P.O.

and wrote "IV" on the medical records; and that he had originally prescribed the medication to be given as a pill because he thought that Beatrice would be discharged. However, he decided to admit her after getting x-ray results that showed an ill-defined opacity of her lung that was suspicious for pneumonia. He then changed the medication order to be given by the IV route because he thought that IV antibiotics were more appropriate for a patient who would be admitted.

{¶8} Dr. Conroy, the medical resident on call, testified that she was called in to admit Beatrice in the early morning hours of April 27, 2001, and that she wrote an admission note at 2:35 a.m. In the admission note Dr. Conroy listed congestive heart failure and an MI as possible conditions affecting Beatrice, and she noted Zithromax, 500 mg IV to treat the possibility of pneumonia. She also stated that symptoms of being hot and restless, combined with Beatrice's past medical history, would cause her to suspect a heart attack, severe congestive heart failure or a pulmonary embolus, but that she would not suspect a drug reaction absent complaints of "itchiness."

{¶9} Plaintiff's nurse expert, Denise Kresevich, RN, testified that before an IV drug is administered, a nurse should use a syringe of normal saline to "flush the line" of the heparin well. She explained that the proper way to administer IV Azithromycin is to take a vial of powdered Azithromycin, add 4.8 ml of sterile water to the powder to reconstitute it, inject a syringe into the vial to retrieve the reconstituted Azithromycin, and then inject that mixture into a small bag of diluent, such as 250 cc of dextrose and water known as "D5W." Once that is done, the bag is hung on a metal pole and the medicine is administered over a period of 60 minutes through IV tubing connected to the heparin well. This process of administering medication is known as "IV Piggyback" or "IVPB." She further explained that "IV push" means drawing medicine into a syringe and injecting it directly into the heparin well over a period of one to two minutes, and that "IV bolus" means mixing the medicine with 250 to 500 ccs of fluid and administering it

through IV tubing with the roller clamp wide open to allow the medicine to flow rapidly.

{¶10} Nurse Kresevich opined that Azithromycin was not administered properly or appropriately in this case because the IV diluent or "add-mixture" is not documented in the medical records and that the standard of care requires that the volume of diluent be charted in order to ensure proper fluid balance and to prevent dehydration. She further opined that if the Azithromycin were given IVPB, the presence of the IV bag should have been noted on the transfer sheet; and that the lack of documentation of an IV bag accompanying Beatrice to the eighth floor shows that the medicine was administered in its entirety before she was admitted. Nurse Kresevich also testified that an allergic reaction should have been considered as the cause of Beatrice's restlessness due to the timing of the administration of Azithromycin and the code blue. She questioned the accuracy of Beatrice's medical records because "5:30 a.m." is listed as the time of transfer to the eighth floor, but that notation appears to have been written over a different time and there is no notation as to the individual who made the change.

{¶11} Nurse Kresevich testified that there were three possible ways that the drug was administered: 1) by IV push using a large syringe; 2) by mixing it with only 50 cc of diluent and hanging it in an IV bag; or 3) by mixing it with 250 cc of diluent and hanging it in an IV bag. Nurse Kresevich opined to a reasonable degree of nursing certainty that the most likely explanation for the code was that the drug was correctly mixed with 250 cc of diluent and hung but that it was given too quickly, in less than 60 minutes, because the roller clamp was wide-open. She concluded that since the drug was given too rapidly, it caused agitation and cardiac arrest.

{¶12} On cross-examination, Nurse Kresevich admitted that she had never practiced nursing in an emergency room; that she had never testified about

Azithromycin before; that she had never administered Azithromycin via IV push and was not aware of any nurse who had used that procedure; that she doubted plaintiff's account that the drug was administered via IV push; and that based upon the medical records, there was no way to verify whether a bag of Azithromycin was present when Beatrice "coded."

{¶13} Nurse Melfof testified that she was certified in IV therapy and has administered medicine to patients for more than 22 years; that although she did not remember Beatrice or the treatment that was rendered to her, her handwriting appears on page 2 of Defendant's Exhibit 1 with regard to having administered Azithromycin to Beatrice at 5:25 a.m. on April 27, 2001. Although she was unsure who wrote "IVPB" on Defendant's Exhibit 1, she stated that since she signed off on having given the medication, she would have given it as directed. She also testified that since Azithromycin is an antibiotic, it would not be given by IV push; that she has never given any antibiotic by IV push.

{¶14} She further stated that there is an "antibiotic add-mixture chart" in the "Pyxis" room (where the medications are stored in a machine) that shows that IV Azithromycin should be mixed with 250 cc D5W. (Defendant's Exhibit 11.)

{¶15} Ronald Miller, RN, testified that he did not recall treating Beatrice, but that his handwriting appears on page 2 of Defendant's Exhibit 1 where it reads "Azithromycin, 500 mg, IVPB." Miller stated that he was working with Melfof that day in the ER and the surgical intensive care unit; and that it appears from the medical records that the Azithromycin was given IVPB. Miller maintained that he has never given any antibiotic, including Azithromycin, by IV push; that he would never use a 60 cc syringe to administer Azithromycin; and that he would use 250 cc D5W as an add-mixture and administer the drug over a period of 60 minutes.

{¶16} Sheryl Hoyne, administrator for patient care services, testified that she had been responsible for nursing operations at defendant's hospital in 2001. According to Hoyne, Defendant's Exhibit 1, page 4 shows that Beatrice was using a portable oxygen cannister and a cardiac monitor and that these devices were

transported with her to the eighth floor. She explained that when the term IVPB is used, it is assumed that most drugs will be administered over a one-hour period; that Azithromycin is mixed with D5W; that when an antibiotic is administered, there is no requirement to list the add-mixture; and that during the code blue, the chronological flow sheet would only include those drugs that were administered during the code. Hoyne stated that if an IV antibiotic were being given, once the code started, medical personnel would have discontinued the antibiotic by pulling out the tubing and would have used that port to administer emergency medications.

{¶17} Linda Wood, RN, acknowledged that she prepared the code blue records and that her duty as the note-taker in the code was to capture all important activity. She testified that Beatrice coded shortly after she arrived on the eighth floor, although she had started to assess Beatrice before she coded. According to Wood, the heparin well in Beatrice's right wrist was noted on the code flow sheet and that it was the same device that had been placed while Beatrice was in the ER. Wood related that she has never seen anyone overdose from Azithromycin and that a typical allergic reaction would include a rash at the injection site.

{¶18} Nancy Lae, a staff pharmacist, was also present during the resuscitation efforts. She testified that according to the label on the bottle of powdered Azithromycin, it must be given through an IV route only; that the Pyxis machine record reflects that a vial of Azithromycin was removed by Irma Melfos at 5:14 a.m.; that Azithromycin is a level-one drug, meaning that it is very safe and has minimal potential for adverse side effects; and that the term "IVPB" suffices for an add-mixture description because it is understood that Azithromycin would be mixed per the manufacturer's recommendations.

{¶19} Kathleen Malthouse, defendant's expert witness, testified that she has been an RN for 28 years and that she has been certified both in emergency nursing and in advanced cardiac life support. She opined that, based upon the medical records, Azithromycin was given appropriately. According to Nurse Malthouse, IV Azithromycin is always administered with 250 cc of D5W and it is

appropriate to regulate the flow of IV Azithromycin with a roller clamp. She testified that the bag of medication would have been disconnected during the code so that the heparin port could be used for other life-saving drugs; that the removal of the bag of antibiotics during the code would not normally be charted; that Azithromycin would not be given by IV push; and that there is no standard of care that requires a nurse to chart the removal of an existing IV solution during a code.

{¶20} Angela Orino, M.D., testified that she was a senior resident in April 2001; that her first contact with Beatrice was after the code blue was called; and that she was told that Beatrice had been agitated and had shortness of breath before the code but that she did not suspect an adverse drug reaction at the time. According to Dr. Orino, after the code, she had requested that Beatrice be evaluated by a general surgeon, a vascular surgeon and a cardiologist to determine causative factors for the code; she had suspected a possible abdominal aneurysm or an intestinal problem but that neither was found; and she had also suspected an MI because shortness of breath and agitation were signs of a heart attack. Dr. Orino related that the autopsy report stated that there were three high-grade blockages in Beatrice's coronary arteries and that coronary artery disease, myocardial infarction and anoxic brain injury were listed as the causes of death.

{¶21} Dr. Orino further testified that she has prescribed Azithromycin to children and adults for upper-respiratory infections and pneumonia; that Azithromycin typically does not cause toxicity; that the only known allergic reaction is by way of self-reports of a rash; and that Beatrice did not exhibit symptoms typical of an adverse drug reaction.

{¶22} Steven W. Hosea, M.D., plaintiff's medical expert, opined that based upon plaintiff's testimony that the drug was administered via syringe, the rapid administration of Azithromycin was the primary cause of the heart attack; that although Azithromycin was the proper drug to give Beatrice, the manner in which it was administered was a deviation from the standard of care; that his primary concern in this case was a lack of documentation; and that he did not know of

anyone who administered IV Azithromycin via bolus or push. However, he also opined that Beatrice was going to have a heart attack “somewhere down the line” because of the narrowing of her cardiac arteries.

{¶23} George Gianakopoulos, M.D., defendant’s expert, testified that he was board-certified in internal medicine and infectious diseases. He opined that the cause of Beatrice’s death was coronary artery disease which led to an acute myocardial infarction and that she did not have an allergic reaction to Azithromycin. He testified that based upon the medical records, Beatrice had no known drug allergies; that manifestations of an adverse drug reaction typically include irritation, tenderness, pain, and swelling at the IV site, and that Beatrice’s medical records do not reflect those observations or symptoms.

{¶24} Dr. Gianakopoulos also opined that the administration of Azithromycin did not cause Beatrice’s heart attack or her death, and that her underlying heart disease was the cause of her heart attack. He further opined that based upon the medical records, there is no reason to doubt that Azithromycin was given IVPB; that it would have been understood that IVPB means to mix with 250 cc of diluent; and that administration of Azithromycin was appropriate given the possibility of pneumonia. He further testified that his opinion would not change regarding the cause of death even if Azithromycin were given by IV push or by bolus; and that he has never encountered a patient suffering a heart attack as a result of receiving Azithromycin.

{¶25} In order to prevail on a claim of medical malpractice or professional negligence, plaintiff must first prove: 1) the standard of care recognized by the medical community; 2) the failure of defendant to meet the requisite standard of care; and 3) a direct causal connection between the medically negligent act and the injury sustained. *Wheeler v. Wise* (1999), 133 Ohio App.3d 564; *Bruni v. Tatsumi* (1976), 46 Ohio St.2d 127. The appropriate standard of care must be proven by expert testimony. *Bruni* at 130. That expert testimony must explain what a medical

professional of ordinary skill, care, and diligence in the same medical specialty would do in similar circumstances. Id.

{¶26} “In a negligence action involving the professional skill and judgment of a nurse, expert testimony must be presented to establish the prevailing standard of care, a breach of that standard, and, that the nurse’s negligence, if any, was the proximate cause of the patient’s injury.” *Ramage v. Cent. Ohio Emergency Serv., Inc.*, 64 Ohio St.3d 97, 1992-Ohio-109, paragraph one of the syllabus.

{¶27} The court finds that plaintiff has failed to prove that defendant’s employees administered Azithromycin inappropriately. The medical records reflect that Dr. Khandelwal prescribed IV Azithromycin and that Nurse Melfof administered it by IVPB. Plaintiff’s testimony that the medicine was administered via syringe directly into Beatrice’s heparin well is not credible. The court finds that the more likely explanation of what plaintiff saw was Nurse Melfof flushing the line before administering Azithromycin IVPB. Even plaintiff’s expert, Nurse Kresevich, testified that she believed that the medicine was given IVPB and that it was not injected directly into the heparin well. The court further finds that plaintiff has failed to prove that Azithromycin was administered too rapidly.

{¶28} Moreover, the greater weight of the evidence shows that Beatrice did not have an allergic reaction to Azithromycin. Although restlessness may be a sign of an allergic reaction, it is also a symptom of an MI. In addition, a typical allergic reaction includes a rash and swelling at the injection site and Beatrice did not present those symptoms.

{¶29} Based on the totality of the evidence and the credibility of the witnesses, the court finds that plaintiff has failed to prove his claims of medical negligence and wrongful death by a preponderance of the evidence. Plaintiff also asserts a claim for loss of parental consortium. “A claim for loss of consortium is derivative in that the claim is dependent upon the defendant’s having committed a legally cognizable tort upon the [individual] who suffers bodily

injury." *Bowen v. Kil-Kare, Inc.* (1992), 63 Ohio St.3d 84, 93. Since plaintiff has failed to prove his claims of medical negligence, wrongful death, and lack of informed consent, his loss of parental consortium claim must also be denied. Accordingly, judgment shall be rendered in favor of defendant.

{¶30} This case was tried to the court on the issue of liability. The court has considered the evidence and, for the reasons set forth in the decision filed concurrently herewith, judgment is rendered in favor of defendant. Court costs are assessed against plaintiff. The clerk shall serve upon all parties notice of this judgment and its date of entry upon the journal.

---

FRED J. SHOEMAKER  
Judge

Entry cc:

John M. Mahota  
Ray G. Brown  
341 South Third St., Suite 300  
Columbus, Ohio 43215-5463

Attorneys for Plaintiff

Timothy T. Tullis  
Traci A. McGuire  
Special Counsel to Attorney General  
65 East State St., Suite 1800  
Columbus, Ohio 43215

Attorneys for Defendant

[Cite as *Laney v. Ohio State Univ. Med. Ctr.*, 2004-Ohio-3183.]  
Information Copy:

Paula Paoletti  
Senior Deputy Attorney General  
Court of Claims Defense Section  
150 East Gay Street, 23rd Floor  
Columbus, Ohio 43215-3130

HTS/cmd  
Filed June 16, 2004  
To S.C. reporter June 21, 2004