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## Case No. 25 - Death of a 25 year old Woman in a Hospital's MICU with Sepsis and Septic Shock

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CASE NO. 25

## DEATH OF A 25 YEAR OLD WOMAN IN A HOSPITAL'S MICU WITH SEPSIS AND SEPTIC SHOCK

E.R. VISIT 1/6/05 - 7:25 A.M. - 11:00 A.M.

On Thursday, January 6, 2005 at 7:25 a.m., Wilma, age 25, and the mother of two children, ages 8 and 2, arrived at the hospital E.R. Wilma was assessed by Dr. P, an E.R. attending.

Wilma's chief complaint was chest pain, cough, and pain (on a scale of 1-10, pain was 10) all over her body for the last 3 days. The record documents a pulse rate of 90, and later 143 and an EKG of sinus tachycardia at 160. BPs of 79/64 and 100/60 are documented.

The T was 98.7. A WBC of 11.3 with 40% bands were present. There also were abnormal liver function tests and an abnormal anion gap consistent with acidosis. A pregnancy test was positive. According to Dr. P, the WBC differential and the blood chemistries were not available at the time of discharge. Though not documented, Dr. P said he recommended chest X-ray, but according to Dr. P, Wilma refused.

Dr. P discharged Wilma at 11:00 a.m. with a diagnosis of right chest musculoskeletal chest pain and acute bronchitis. Though he said he did not suspect infection, Dr. P prescribed Zithromax as an antibiotic to be taken "if she didn't feel good." A blood culture was not ordered because Wilma was not admitted.

Dr. P acknowledge that if sepsis is suspected the patient must be admitted.

## READMISSION 1/7/05 AT 1:53 A.M.

Wilma returned to the hospital E.R. on Friday morning (almost 15 hours later) and was seen by a triage nurse at 1:53 a.m. A WBC at that time was down to 4.0. At 2:10 a.m., Dr. D, the E.R. attending diagnosed sepsis and septic shock. Chest Xray revealed evidence of pneumonia, more extensive in the right lung. Dr. D spoke with Dr. S, the on-call attending for the MICU but Wilma was not admitted to the MICU until 5:00 p.m. on Friday, January 7<sup>th</sup>. As such, Wilma was in the E.R. with a diagnosis of septic shock for approximately 15 hours. No MICU attending physician saw the patient while she remained in the MICU.

According to Dr. S, the labs from the 1/6/05 E.R. visit that revealed 40% bands, anion gap of 16, mild liver function abnormalities, hypotension and elevated heart rate all supported a diagnosis of mild acidosis, hypoperfusion and septic shock at that time. Aware that if untreated such can lead to organ failure and death, the plan according to Dr. S was to monitor Wilma in the E.R. and to start broad spectrum antibiotics. Then according to Dr. S in the MICU, they would perfuse Wilma with a "wide open" IV. According to Dr. S stronger antibiotics would be indicated only if the patient got worse.

At 11:00 a.m. on Friday, January 7<sup>th</sup>, Wilma was intubated and attached to a mechanical ventilator to support breathing and to reduce the patient's efforts at breathing. Broad spectrum IV antibiotics - were begun to cover possible gram negative or gram positive bacterial causes for the sepsis. The WBC rose to 17.0 after IV antibiotics were started.

Dr. S went off duty on Friday, 1/7/05 at 4:00 p.m. Dr. S stated that though no cup was available in the E.R. based on other data, he perceived the prognosis at 4:00 p.m. as good.

When Dr. S went off duty at 4:00 p.m. on Friday, 1/7/05, he did not consider the need for Category C antibiotics or Xigris as he perceived the patient was improving. Yet, Dr. M when he came on duty on 1/7/05 at 4:00 p.m. said he perceived the prognosis was very grave with "impending multi-organ failure" because Wilma already received a lot of fluids. Dr. M said that he did not believe that treatment to support cardiac output with medication was indicated "unless nothing else is working." Hypotension persisted, and fluids were never given "wide open." According to Dr. M, the plan was to wait until the antibiotics to do their work as they do not work instantaneously.

By Saturday at 11:00 a.m. on January 8<sup>th</sup>, the MICU attending Dr. M ordered blood lactic acid level tests to assess if the patient's hemodynamics were adequate. Yet, Dr. M said he perceived that such information was unnecessary for the prior 33 hours that the patient was in the hospital with a diagnosis of septic shock because according to Dr. M they already knew that she was getting worse during that time interval. No therapeutic steps had been taken to assist Wilma's hemodynamics.

Over the evening of Friday, 1/7/05 until Saturday 1/8/05 at 8:00 a.m., BPs were dropping yet the first treatment was a fluid bolus at 11:00 a.m. By noon, the BP was 76/36. A cardiologist suggested levophed, but Dr. M felt that fluid boluses were sufficient.

On Saturday, January 8, 2005 at 12:45 p.m., Wilma had the first of a series of 5 cardiac arrests. She was pronounced dead on Saturday, January 8, 2005 at 6:57 p.m. It was in the time frame leading up to the first cardiac arrest that xigris was discussed with the family. It was after the first cardiac arrest that levophed was given because the BPs didn't come up with fluids.

After obtaining all necessary cultures and beginning broad spectrum antibiotic treatment, monitoring, ideally in an MICU is aimed at reversing cardiovascular, pulmonary and metabolic abnormalities. The goal of volume resuscitation guided by appropriate monitoring is to rapidly stabilize hemodynamics. Vasopressors should be added if fluid therapy does not restore adequate arterial pressure and organ perfusion.

Wilma had a series of 5 cardiac arrests on Saturday, 1/8/05. A fatal arrest occurred at 6:57 p.m. The cause of death was listed as multiorgan dysfunction (MOD) due to cardiac arrests caused by septic1 shock.