

HIV/AIDS: A New Era of Treatment

Wanda Lopez

*I*n 1982 four words caused panic across the world, changing the way many thought about disease and survival. Those words were acquired immune deficiency syndrome, or AIDS, which is caused by the human immunodeficiency virus, or HIV. Deaths from this disease increased throughout the years without any end in sight. The United States suffered its share of deaths and the most deaths were experienced in 1995. In that year, approximately 50,489 people died from the virus (Centers for Disease Control and Prevention [CDC], 2009). This high death rate caused many to question how a disease could take so many lives in such an industrialized and advanced society. More surprisingly, people began to blame the government for not working fast enough to find a cure and even worse, many claimed the government was behind the creation and spread of the disease. This public epidemic caused people to unite with the common goal of finding a cure for this deadly, unrelenting disease.

In 1996, one major step toward the goal of finding a cure was achieved. In that year, new combination drugs were found to be highly effective in controlling the development of HIV into its most deadly form, AIDS, which inevitably resulted in death. In the United States, deaths attributed to AIDS soon declined; for instance, in 1996, 1997 and 1998, deaths reported from HIV/AIDS were 37,739, 21,850 and 17,840 respectively (CDC, 2009). Hence, the death rate of this highly contagious and deadly disease was now brought under control by these new medications. These medications currently prolong the life of HIV/AIDS patients, giving hope for finding a cure.

This paper explores how new HIV medications, called antiretroviral medications, have prolonged the lives of HIV patients and resulted in new challenges within the healthcare system. The paper will explore how this medication has transformed HIV from an acute disease to a chronic disease with new complications. Treating these types of patients for diseases other than HIV/AIDS is new in the hospital setting and oftentimes presents challenges to healthcare professionals. These challenges involve balancing the treatment of HIV/AIDS with the treatment of other chronic diseases. Therefore, treatment must be expanded to include other diseases due to the success of HIV medication.

As HIV/AIDS has changed from an acute life threatening disease to a chronic one, this change has affected the healthcare system. In order to explore and discuss what has changed and how, the paper will seek answers to the following questions:

1. What are the successes of the antiretroviral medications?
2. What are the negative outcomes related to the successes of HIV/AIDS treatment?
3. Based on these findings, how can healthcare professionals develop a treatment program for long-term HIV patients?

What are the Successes of the Antiretroviral Medications?

When the human autoimmune deficiency disease was first diagnosed, it had a profound impact on society. Soon the disease spread and deaths from the disease rose as well. Death became synonymous with the diagnosis of HIV/AIDS. However, this has all changed with the creation of new and improved medications. This section will investigate the success of these new HIV/AIDS medications.

In 1996, new medications were introduced to treat the human autoimmune deficiency disease (HIV/AIDS). The first group of medications introduced was classified as nucleoside reverse transcriptase inhibitors (NRTIs). NRTIs act by blocking the virus from duplicating, thus preventing its spread in the body. However, when these medications were first introduced in treatment, the side effects soon outweighed the benefits, resulting in unsuccessful outcomes (Kirton, 2008). As Kirton (2008) mentioned, “This approach provided some survival benefit but more often led to an increase in drug-related adverse reactions, ranging from nausea to painful peripheral neuropathy to life-threatening pancreatitis” (p. 44). In order to resolve this problem, new categories of drugs were created to augment the NRTIs. These new classes included non-nucleoside reverse transcriptase inhibitors (NNRTIs), and protease inhibitors (PIs), as well as other smaller classes like fusion inhibitors, and integrase strand transfer inhibitors. Soon everything turned around and these drugs, along with NRTIs, succeeded by maintaining low viral loads and keeping the body’s immune system cells (used for fighting infection) within or above normal limits. A combination from two different classes was found to be highly effective in treating HIV/AIDS (Kirton, 2011). The actions of these medications block the virus from replicating at different phases of the virus’ development. Therefore, for the newly diagnosed patient, a regimen of NRTIs, with either a PI or an NNRTI was prescribed (Kirton, 2008). As Kirton (2008) mentioned, these medications are now referred to as highly active antiretroviral therapy (HAART). In fact, the best long-term outcomes were found to occur when two classes of HAART drugs are combined (Kirton, 2011).

These drugs have been very successful in the treatment of HIV/AIDS. A major benefit is that this medication prolongs the lives of people diagnosed with HIV/AIDS. Data showed that as of 1996, HIV positive people are living longer because of these new medications (World Health Organization [WHO], 2009). As a result, there is a growth in our population of those living with HIV/AIDS (Kirton, 2011). For example in 1996, 239,000 people were living with HIV/AIDS as compared with 1,142,714 in 2009 (CDC, 2009). Furthermore, these new medications have prolonged the lives of HIV positive people so that their lifespans are similar to those without HIV (Goodwin,

2010). An estimated “30 million years” have been saved (Kirton, 2008, p. 44). Moreover, the success of HAART medications has transformed HIV/AIDS from an acute disease to a chronic and manageable one (Kirton, 2011). People diagnosed with HIV/AIDS can live longer and more productive lives.

As this paper demonstrates, these new HAART medications have changed HIV/AIDS from an acute disease with a death sentence to a chronic one with a normal life expectancy. This is apparent as HIV/AIDS positive people are now seen managing this chronic disease in every age group (Kirton, 2011). Since the implementation of HAART medications, deaths attributed to HIV/AIDS have also been reduced (WHO, 2009). In 1996, there were 39,200 deaths as opposed to 17,374 in 2008 (CDC, 2009). This proves that more people are living longer with HIV/AIDS because of the new medications (WHO, 2009). Antiretroviral medications have increased survival by thirteen years (Kirton, 2011). The new HAART medications have caused a major transformation of HIV/AIDS. It is no longer a deadly disease, but a chronic manageable one. Yet, as a chronic disease, not only is the patient affected, but the whole healthcare system is impacted.

What are the New Complications Arising in the HIV Positive Population?

As the HIV population lives longer and grows older, new complications not seen before with HIV positive people are emerging. These complications are being attributed to various factors; some have been linked to the new medications, while others are connected to aging and lifestyle practices. As a result, the healthcare system is being presented with new predicaments in the treatment of HIV/AIDS.

Some of the complications found among the HIV positive population are diseases attributed to smoking. Researchers found that the number of smokers in the HIV positive population far surpasses those of the general population (Lifson, Neuhaus, Arribas, Van den Berg-Wolf, Labriola, and Read, 2010). Kirton (2008) mentioned that 72% of HIV positive people smoke as opposed to 21% of the general population. Smoking causes numerous diseases and has been a major health concern in the United States. In fact, smoking has been linked to cardiovascular disease, pneumonia and cancer (Lifson et al., 2010). Smoking is linked to cardiovascular disease, pneumonia, cancer, abdominal aortic aneurysm, cataracts, periodontal disease, and leukemia (Kirton, 2008). Also, Lifson et al. (2010) pointed out that smoking has caused a high rate of deaths among HIV positive people from non-HIV related causes, for example pneumonia, cancer and cardiovascular disease. Smoking is also one the major causes of heart attacks in the HIV population (Kirton, 2011).

In addition, the new HIV medications have also been linked to myocardial infarctions (MI), or heart attacks. Although the new medications have lowered the death rate, they increased the risk factors for non-HIV related

diseases among HIV positive people (Lifson, 2010). Kirton (2008) noted patients taking the new medications for six years had an increase of MIs. Kirton (2011) claimed MIs have doubled in the HIV population particularly among those treated with protease inhibitors (PIs) and nucleoside reverse transcriptase inhibitors (NRTIs). Supporting this claim is a study conducted in France that found an increase in MIs among those patients prescribed PIs (Some, 2010). This study revealed that medications under the PI class caused MIs. Additionally, researchers reviewed medical records in Boston and found that MIs doubled within the HIV positive population (Kirton, 2008). Kirton (2008) claimed that based on these reports the high number of MIs within the HIV population can be linked to the medications used to treat HIV/AIDS.

In addition to MIs, cardiovascular disease within the HIV population is a complication possibly caused by the new medications as well as the disease. As people are living longer with HIV, an increase of cardiovascular disease has been witnessed (Some, 2010). Kirton (2008) suggested that because HIV is an inflammatory and immune activating disease, it may be the cause of cardiovascular disease. Also, Kirton (2008) claimed an increase in lipids experienced by HIV positive people, which often develops into atherosclerosis, may be caused by the new HIV/AIDS medications. Furthermore, the prolonged use of medications in the PI class has been linked to cardiovascular disease (Some, 2010). Kirton (2011) confirmed that cardiovascular disease is now common within the HIV positive population. Therefore, the rise in cardiovascular disease can be attributed to the side effects of these newer medications.

Diabetes, in addition to MIs and cardiovascular disease, has been discovered as another new complication among HIV positive people. The World Health Organization (2009) reported that metabolic syndrome and obesity, two conditions that cause diabetes, are now found in the HIV population. Kirton (2008) stated that the new HIV/AIDS medications have been linked to glucose abnormalities. As Kirton (2011) confirmed, new HIV/AIDS medications are found to cause diabetes. In fact, Kirton (2008) noted that insulin resistance, which develops into diabetes, occurred in between 60% and 85% of HIV positive people. Another risk factor of diabetes is obesity and a study in Pennsylvania found some HIV positive people were obese (Kirton, 2008). Based on the above it can be concluded that the new medications, when coupled with other risk factors, can cause diabetes in the HIV population.

In summary, emerging from the successes of new medications are new complications due to HIV positive people living longer. The causes of these complications have been linked to the HIV disease, and the new medications, as well as lifestyle practices (i.e. smoking and obesity). As a result, the treatment of HIV/AIDS by healthcare personnel must go far beyond the HIV disease itself.

How Can Healthcare Professionals Develop a Treatment Program for Long-Term HIV Patients?

New complications arising in the treatment of HIV/AIDS pose never before experienced challenges for healthcare professionals, in particular for nurses. Nurses must be knowledgeable not only about HIV, its medications and side effects, but also about the new complications and diseases emerging as people live longer.

The findings revealed smoking related complications among the HIV population; therefore, smoking must be addressed and incorporated into all HIV treatment programs. Lifson et al. (2010) stated that due to the large number of smokers within the HIV population, a program addressing smoking must be included in any HIV treatment programs. Additionally, Kirton (2011) confirmed that HIV treatment programs must include a smoking cessation program. Supporting this claim, Kirton (2008) also mentioned that when nurses encourage patients to stop smoking, 15% to 30% quit as opposed to 3% who stop smoking without nursing intervention. Since nursing interventions are very important to the successful treatment of smoking cessation programs, nurses must carry out a comprehensive approach specifically developed for smoking cessation, which includes prescribing medications, i.e. bupropion and varenicline (Lifson et al., 2010). Kirton (2008) stated that nursing intervention in smoking cessation programs should be brief, but should include follow-ups. Follow-ups are advantageous in that they afford an opportunity for nurses to discuss any issues or problems that the patient may be experiencing. Also, follow-ups encourage a stronger nurse and patient relationship by building trust.

In addition to smoking cessation programs, the causes related to MIs, CVD and diabetes must also be included in HIV treatment programs due to the high incidents of these complications. Kirton (2008) suggested that all HIV positive patients be assessed, not only for HIV, but for other non-HIV/AIDS related diseases. Moreover, nurses should inform HIV positive patients of all preventative methods necessary to help lower the risks of non-HIV/AIDS complications (Kirton, 2011). As Kirton (2008) stated, "Cardiovascular and metabolic complications of HIV infection can be prevented or modified by providing lipid-lowering therapy when indicated, maintaining BP within normal limits, and monitoring for diabetes" (p. 48). Obesity, shown to be a cause of CVD, MIs and diabetes, should be monitored by the nurse during treatment (Kirton, 2008). As mentioned earlier, medications in the PI class also contribute to CVD; therefore, Kirton (2011) recommended that HIV medications from other classes should be used to lower the instances of CVD, such as NRTIs and integrase strand transfer inhibitors. These medications have not been linked to CVD (Kirton, 2011). At the time of this article, studies on the use by doctors of this alternative were not known.

Along with the disease related complications, the healthcare provider should prepare the patient regarding the new HIV/AIDS medications. Firstly, the nurse should evaluate the patient's knowledge and the willingness for

treatment (Kirton, 2011). That includes teaching the patient how to deal with complications from the treatment as well as the disease (Kirton, 2008). This is accomplished by the nurse educating the patients on what to expect from treatment and the side effects, as well as observing patients for complications (Kirton, 2011). More importantly, Kirton (2011) stressed that the patient must be informed that it is critical to take the medications as directed without stopping, unless directed to do so by a doctor.

Developing an effective treatment program geared toward addressing these new complications is essential for the successful treatment of HIV/AIDS. As discussed in this paper, nurses must intervene a patient's behalf in order for treatment to be effective. Nurses must be fully knowledgeable as to the causes and its preventive measures, so that information can be imparted to the patient resulting in successful treatment. The biggest challenge for nurses is ensuring the patient's compliance with all aspects of the treatment program. That includes the patient complying with the prescribed dosages of medications as well as following all recommendations for a healthy lifestyle.

Conclusion

This paper has demonstrated how new HIV/AIDS medications have resulted in new challenges within the healthcare system. These new medications have successfully prolonged the lives of those HIV positive people who previously lacked much hope. However, these successes do not come without consequences. As Kirton (2008) mentioned, increased survival rates with new medications have presented challenges for the healthcare system. One complication includes the medication's side effects that must be monitored by nurses. In addition, new complications other than the side effects have manifested as these patients live longer. As a result, the healthcare system must now treat HIV positive people for non-HIV/AIDS related diseases. Oftentimes, this presents a challenge for nurses. Furthermore, patients now must manage the HIV/AIDS disease as well as new complications and diseases. In summary, we are now seeing a growing population living HIV/AIDS experiencing the same diseases and complications as the general population. The difference is HIV/AIDS is a major complication of its own and thereby complicates the treatment setting.

Based on these findings, healthcare professionals must develop treatment programs for long-term HIV patients. All contributing risk factors must be included in these treatment programs. Therefore, in order for treatment programs to be successful, the risks as well as prevention measures must be incorporated into their development. In order to stay current on the new developments, studies must be carried out with the goal of monitoring the effectiveness of treatment programs as well as detecting any new complications. Studies should examine what programs have a high patient compliance rate as opposed to those that are not successful in order to design effective treatment programs. Also, studies should seek to determine which medications are effective

with the least side effects. This would benefit patients and reduce compliance problems related to side effects. Finally, studies should be carried out to find new complications and the most efficient way to treat and prevent them. This would assist nurses in the treatment of HIV positive patients. Overall these studies should examine new preventative measures and treatments on a continuous basis. This will result in the implementation of up-to-date and effective treatment that will help nurses provide the best quality of care for the HIV positive patient.

References

- Centers for Disease Control and Prevention. (2009). Diagnosis of HIV infection and AIDS in the United States and dependent areas, 2009. Retrieved from <http://www.cdc.gov/std/stats/>
- Goodwin, J. (2010, October 28). More older Americans living with HIV. *Health Day*. Retrieved from <http://www.businessweek.com/lifestyle/content/healthday/645011.html>
- Kirton, C.A. (2008). Managing long-term complications of HIV infection. *Nursing 2008*, 38(8), 44-49.
- Kirton, C.A. (2011). HIV: the changing epidemic. *Nursing 2011*, 41(1), 36-43.
- Lifson, A., Neuhaus, J., Arribas, J., van den Berg-Wolf, M., Labriola, A., & Read, T. (2010). Smoking-related health risks among persons with HIV in the strategies for management of antiretroviral therapy clinical trial. *American Journal of Public Health*, 100(10), 1896-903. Retrieved from Proquest database.
- Some antiretroviral drugs used to treat HIV associated with an elevated risk of myocardial infarction. (2010). *Formulary*, 45(9), 292. Retrieved from <http://formularyjournal.modernmedicine.com/formulary/Modern+Medicine+Now/Some-antiretroviral-drugs-used-to-treat-HIassoci/ArticleStandard/Article/detail/691163>
- World Health Organization [WHO]. 2009. New HIV infections reduced by 17% over the past eight years. Geneva. Retrieved from <http://www.ask.com/web?qsrc=2990&o=0&l=dirq=aids>