Editorial

Diabetes-aids couplet: emerging challenge for the pharmaceutical industry

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Singer Elton John once said ironically in a BBC interview that it is easier to treat HIV infection that Diabetes in this days (International Diabetes Foundation). This statement assumes greater significance when increasing incidence of Diabetes is found in AIDS patients, partly due to hyperglycemic effect of medications used in HIV infection and induction of a pre-Diabetes syndrome in AIDS patients. There may be other obscure reasons for this association but the pathogenesis is least understood. So, one immediate need arises to circumvent glucose enhancing side effects of therapeutic agents used in HIV infection. Pharmaceutical industry needs to come up with alternative therapies or improving existing therapy regimen to get rid of the side effects.

In a landmark paper published in Diabetes care in 2007 Samars et al.[1] demonstrated unequivocally the "Prevalence of metabolic syndrome in HIV-infected patients receiving highly active antiretroviral therapy using International Diabetes Federation and Adult treatment Panel III criteria". In HIV patients there can be three categories of diabetes, namely

i. Patients with preexisting diabetes who contract HIV

ii. Those who are diagnosed to have diabetes at onset of HIV infection

iii. Others who develop hyperglycemia after start of therapy

These subgroups need to be managed differently, as the mechanisms of metabolic derangement vary in them.[2] with a high prevalence of diabetes in the background population, it stands to reason that the same predisposing factors will operate in patients with HIV as well. Many risk factors contribute to the culmination of symptoms that result in metabolic syndromes in AIDS patients. These variables include advancing age, male gender, longer duration of HIV infection, low CD4 count, high viral burden, high body mass index, increased waste to hip ratio, socio economic class and certain ethnic backgrounds or culture, thrifty genes. However, most unequivocal factor that contributes toward diabetes in AIDS patients include the therapeutic agents used in HIV infected patients.

Highly active antiretroviral therapy (HAART) in HIV infection produces a variety of symptoms including, but not limited to, derangement in metabolic parameters like dysregulation in lipid metabolism, insulin resistance and ectopic lipid deposition in organs i.e. visceral fat which may induce insulin resistance, gradually leading to Type II Diabetes Mellitus. Many anti retroviral agents used for AIDS patients may induce deranged glucose and lipid metabolism leading to T2DM. The risk factors of diabetes also include genetic predisposition, obesity and sedentary lifestyle. Thus caution must be advised before use of any anti-retroviral medicine. The measurement of fasting and postprandial blood glucose should be a compulsory step before prescribing any HIV medicine.

It has been reported that in sub Saharan Africa metabolic syndrome, a pre-Diabetes phase has been stimulated by anti-retroviral treatment in AIDS patients which intensify the risk of contracting diabetes. Since a large number of people in this part of the world are afflicted with AIDS, the number in Diabetes patients is likely to rise and thus enhances an existing malady (World Diabetes Foundation). Therefore, periodic monitoring of glucose and lipid profile must be monitored for AIDS patients.

So, Elton John's comment brings optimism about globally concerted efforts against HIV infection whereas it spells out frustration over our incapacity to tackle Diabetes effectively. Since both Diabetes and AIDS infection shares common predisposing background, healthcare providers need to adopt a holistic outlook while pharmaceutical industry needs to innovative anti-HIV therapy devoid of side effects like hyperglycemia that compromise lifestyle of the afflicted millions over the globe.

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Conflict of interest

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