



Review on polypharmacy in HIV drugs

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Abstract

Polypharmacy means the use of a large number of medications. The use of all of them may not be in the patient's best interest. A common consequence is increasing adverse drug effect, some of which are due to drug interactions. Regular reviews are recommended to determine the appropriateness of use of all medications. Polypharmacy is defined as the simultaneous use of multiple drugs to treat a single ailment or condition, or the simultaneous use of multiple drugs by a single patient, for one or more conditions. HIV drugs may cause temporary side effects.

Keywords: Polypharmacy, delstrigo, truvada, medication

Introduction

The term polypharmacy was used over one and a half centuries ago, Polypharmacy is defined as the simultaneous use of multiple drugs to treat a single ailment or condition, or the simultaneous use of multiple drugs by a single patient, for one or more conditions. The population is aging, it has become an important risk factor for poor outcomes in elderly, polypharmacy is the concurrent use of multiple medications by a patient. Polypharmacy most common in elderly, affecting about most of older adults living in the homes ^[1].

Polypharmacy refers to the use of a large number of medications, commonly considered to be the use of five or more. Polypharmacy having several underlying medical conditions, it is much more common in elderly patients. An estimated 30%-40% of elderly patients take five or more medications. An analysis of elderly beneficiaries of a large governmental health plan documented the use of multiple medications. Among users of the pharmacy benefit, the average number of medications was six per user. 47% used five or more medications, 13% used 10 or more, and 3% used 15 or more. The term implies an assumption that using one or more of these medications may be questioned or unnecessary. Polypharmacy also can be defined as the use of more medications than are clinically indicated. A major reason for polypharmacy is that a patient has many co-existing medical conditions receiving treatment. In addition, in the case of diseases such as heart failure and high blood pressure, combinations of two to three different medications are common and recommended. If medications for symptomatic relief are added, it is easy to see why patients end up with a large number of medications. Sometimes a new medication is prescribed to treat the adverse effects of another drug, often when stopping or changing the dose of the offending drug would solve the problem. The major consequences of polypharmacy to a patient is much higher risk of adverse drug effects. This risk increases based on the number of medications prescribed and taken by the patient. These adverse drug effects often require physician contacts and,

in some cases, emergency room visits or hospitalizations. Another possible problem is what is referred to as medication or drug interactions, meaning that the effects of one medication, favorable or unfavorable, may change if given together with another medication. Polypharmacy also place a burden on patients to remember when and how to take all prescribed medications. Multiple medications increase the risks of medication use, adverse effects and medical cost.

The efficacy of antiretroviral therapy is very effective, the use of antiretroviral therapy in older HIV infection patients may be associated with more toxicity than it is among younger individuals. There are limited data evaluating the safety and efficacy of antiretroviral therapy in older population and the impact of multiple medications. The controlled trials general include younger, healthier patients. Despite their potential for altered efficacy, metabolism, and drug reactions in older patients, there is a paucity of data to inform the choice of antiretroviral agent's agents in this population. This applies to recently approved medications. Antibody dependent enhancement are common with antiretroviral therapy and older patients are more likely to experience antiretroviral therapy leading to treatment discontinued. There are evolving data on the potential for harm with the long term use of antiretroviral therapy with specific implications for older patient. There is evidence of increased risk of fracture and renal diseases with the long term use of tenofovir, a component of all of the currently recommended first line regimens for the treatment individuals ^[2].

Nucleoside reverse transcription inhibitors were referred as nukes, they work by interrupting the life cycle of HIV it tries to copy itself ^[4]. Combinations of Nucleoside reverse transcription inhibitors

- Abacavir, lamivudine, and zidovudine (Trizivir)
- Abacavir and lamivudine (Epzicom)
- Emtricitabine and tenofovir alafenamide fumarate (Descovy)
- Emtricitabine and tenofovir disoproxil fumarate (Truvada)

- Lamivudine and tenofovir disoproxil fumarate (Cim duo, Temixys)
- Lamivudine and zidovudine (Combivir)

Multiclass combination drugs or single-tablet regimens

- doravirine, lamivudine, and tenofovir disoproxil fumarate (Delstrigo)
- efavirenz, lamivudine, and tenofovir disoproxil fumarate (Symfi)
- efavirenz, lamivudine, and tenofovir disoproxil fumarate (Symfi Lo)
- efavirenz, emtricitabine, and tenofovir disoproxil fumarate (Atripla)
- emtricitabine, rilpivirine, and tenofovir alafenamide fumarate (Odefsey)
- emtricitabine, rilpivirine, and tenofovir disoproxil fumarate (Complera)

HIV drugs cause temporary side effects when first used.

- Dizziness
- Headaches
- Diarrhea
- Vomiting
- Rashes
- Nausea
- Fever
- Fatigue

Discussion

In this study the period of polypharmacy increased among participants over a 12 year period and was driven by an increase in the use of medication to treat aging related chronic comorbidities, as expected, older patients carried the greatest burden of polypharmacy with hiv positive patients 50years and older having the highest rate^[5]. The coverage was associated with increased polypharmacy. Participants enrolled during the earlier recruitment period were on average older and reported higher rates of medication insurance, therefore greater rates of polypharmacy were expected, regardless of HIV status. Polypharmacy prevalence by HIV status was similar in both age groups toward the end of the observation period. Our findings corroborate the trend of increase polypharmacy among HIV positive and negative population ^[3]. Recently, the polypharmacy was common in both HIV positive and negative individuals, they found similar factors associated with polypharmacy, such as older age, white race and HIV positive statistics. The HIV-positive individuals experience markedly extended survival, and hence experience non-HIV chronic comorbidities. These comorbidities often occur at higher rates and earlier ages than among HIV-negative persons.

Conclusion

Increased rates of comorbidities among the participants drive the main findings of increasing rates of polypharmacy over time. We also observed a convergence of polypharmacy prevalence between HIV-positive and negative participants. It was subjected to several limitations. Research should be needed to determinants of increased polypharmacy and to explore the appropriateness of prescribing practices that may contribute to polypharmacy.

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