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THE EFFECTS OF ANTIRETROVIRAL THERAPY AND OPPORTUNISTIC ILLNESS PRIMARY CHEMOPROPHYLAXIS ON SURVIVAL AFTER AIDS

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OBJECTIVE: To examine the effects of mono and combination retroviral therapies (ART) including triple combination therapies with a protease inhibitor, and primary AIDS opportunistic illness (OI) chemoprophylactic regimens on the survival of persons with AIDS.

METHODS: A total of 18,345 persons diagnosed with AIDS (1993 case definition) from 93 clinics in the U. S. were ordered from 1990 to December 1996 in the CDC's Adult Spectrum of Disease (ASD) project. Fifteen percent of the patient population was female, and 43% were black. Proportional hazards multivariate regression analysis was used to estimate the risk of death for persons receiving mono and combination ART after controlling for medications, CD4+ counts, age, AIDS OI, year of AIDS diagnosis, race/ethnicity, gender, and HIV risk. CD4+ counts, age, and all therapies were assessed as time-dependent covariates. We also examined the effects of primary prophylaxis for *Mycobacterium avium* complex (MAC) (azithromycin, clarithromycin, and rifabutin) and *Pneumocystis carinii* pneumonia (PCP) (TMP-SMX, dapsone, and aerosolized pentamidine) and pneumococcal vaccine on survival.

RESULTS: There were 8,652 deaths during 26,810 person-years of observation. Median survival was 32 months. All regimens of ART significantly reduced the risk of mortality. Triple ART had the most profound effect on survival (RR=0.15, 95% CI, 0.12, 0.19), followed by dual ART of stavudine (d4T) + didanosine (ddI) or lamivudine (3TC), or zidovudine (ZDV) + ddI or zalcitabine (ddC) or 3TC (RR=0.24, 95% CL, 0.22, 0.26), with the least impact exhibited by monotherapy with ZDV, ddI, ddC, or d4T (RR=0.38, 95% CI, 0.36, 0.40). The risk of death decreased for persons receiving any type of ART and PCP prophylaxis, and/or MAC prophylaxis (RR=0.80, 95% CI 0.71, 0.91 and RR=0.73, 95%

CI, 0.64, 0.82 respectively). Pneumococcal vaccination was associated with a slight improvement in survival (RR=0.92, 95% CI, 0.88, 0.96).

CONCLUSIONS: The risk of death is 2.5 times lower for persons receiving triple ART than persons receiving monotherapy. These results provide early indication of the beneficial effects of protease inhibitors on survival in an observational study. Additionally, we found that PCP and MAC prophylaxis and pneumococcal vaccination have positive effects on survival.

Keywords: AEGIS, Acquired Immunodeficiency Syndrome, Pneumonia, Pneumocystis carinii, CD4 Lymphocyte Count, Didanosine, Zidovudine, Anti-HIV Agents, Lamivudine, Pentamidine, Trimethoprim-Sulfamethoxazole Combination, Dapsone, Pneumococcal Vaccines, Adult, Female, Human, therapy, mortality, drug therapy, AIDS

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10

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