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EARLY DETECTION OF HIV INFECTION IN DISCORDANT HETEROSEXUAL COUPLES IN AFRICA

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INTRODUCTION: The early infection period is of interest for studies of pathogenesis. Early detection is also critical as an endpoint in clinical trials of prevention interventions. Strategies to increase identification of new infections include shorter testing intervals and antigen detection methods.

METHODS: HIV discordant couples are enrolled through a couples' VCT center and followed at 3-month intervals. The HIV negative partner is serologically tested with rapid HIV tests (Abbott Determine and Trinity Biotech Capillus), and plasma set aside for weekly p24Ag screening (Beckman-Coulter). Antibody positive patients are counseled and additional samples taken of blood and genital fluids from both partners. Antibody negative individuals that are p24Ag+ are called in for repeat testing and sample collection. The p24Ag is considered positive at 3x the calculated cutoff for the EIA run.

RESULTS: The seroconversion rate in counseled HIV discordant Zambian couples is 7-8/100 PY. Of 106 seroconvertors identified in 30 months of the study, 24 (23%) were p24Ag+. Six of these were antibody positive with two rapid tests at the time p24Ag was detected, the remaining 18 were antibody negative. All 18 were antibody positive when they returned for repeat testing and sample collection, but only 1 of the 18 was still p24Ag+ at re-draw.

CONCLUSIONS: In a cohort with a seroconversion rate of approximately 2% per 3-month interval, one quarter of new infections can be identified during the early, p24Ag+ phase. The main obstacle to detection is the short duration of the antigen positive window, rather than the sensitivity of the antigen test. Because increasing the frequency of study visits would result in decreased retention, the best strategy for obtaining study samples in

early infection is more frequent batching of p24Ag testing and same-day invitations for re-draw.

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10.2 171 10.2 Dynamics of the HIV epidemic and measurement of incidence

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