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## DEVELOPMENT OF ATAZANAVIR RESISTANCE MUTATIONS IN A CLINICAL SETTING AMONG PATIENTS WITHOUT EVIDENCE OF PRE-EXISTING PROTEASE MUTATIONS

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**BACKGROUND:** Little is known about resistance to atazanavir in clinical practice, especially among patients using ritonavir-boosted atazanavir without pre-existent protease mutations.

**METHODS:** We searched our resistance database for all patients that underwent genotypic testing (GT) as a result of virological failure after receiving atazanavir or ritonavir-boosted atazanavir. Patients were excluded if they had evidence of significant pre-existing protease mutations on previous GT.

**RESULTS:** One-hundred and fifteen genotypic tests were performed on 81 patients undergoing virological failure while receiving atazanavir or ritonavir-boosted atazanavir between March 2003 and March 2005. Of these, 47 met inclusion criteria by having no evidence of pre-existent significant protease mutations: 12 were previously protease-inhibitor-naïve and 35 were previously protease-inhibitor-experienced. The mean viral load at the time of virological failure was 16440 copies/ml (median 1429 copies/ml). Average time on atazanavir was 7.4 months. Atazanavir use was ritonavir boosted in 36 patients and unboosted in 11 patients. None (0/36) of the patients receiving ritonavir-boosted atazanavir developed significant new protease mutations. Two (2/11) of the patients receiving unboosted atazanavir developed new G73S mutations. The first patient was indinavir and lopinavir/ritonavir-experienced, and developed a G73S mutation after 8 months of unboosted atazanavir use. This mutation was not seen on a previous GT, performed while the patient was taking lopinavir/ritonavir. The second patient developed a G73S mutation (in addition to L10I, L63P, V77I, I93L) after 19 months of unboosted atazanavir. This patient had five prior genotypic tests without protease mutations, the first while taking lopinavir/ritonavir and the other four while taking unboosted atazanavir.

Two other previously nelfinavir-experienced patients had the appearance of nelfinavir mutations (D30N, N88D). No patients developed I50L or N88S mutations.

**CONCLUSION:** None of the patients taking ritonavir-boosted atazanavir developed significant new protease mutations upon virological failure. Two patients developed a G73S mutation after failing unboosted atazanavir. This mutation may play a role in atazanavir resistance. Two nelfinavir-experienced patients developed mutations linked to prior nelfinavir use (D30N, N88D). None of the patients developed I50L, N88S, or any other significant protease mutation.

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