Reviewer's report

Title: Antimicrobial activity of amlodipine against extensively drug-resistant Acinetobacter baumannii isolates in vitro

Version: 3 Date: 18 February 2013

Reviewer: Michael McConnell

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In this manuscript by Li et al. the authors characterize the antibacterial activity of the calcium channel blocker amlodipine (AML) against clinical isolates of Acinetobacter baumannii in vitro, and its synergistic effects with imipenem in in vitro assays. AML has previously been shown to have antibiotic activity and show synergy with other antibiotics against both Gram negative and Gram positive bacteria, as shown in the studies cited by the authors. It appears, however, that its activity against A. baumannii has not been tested. In general, the study employs appropriate methodology for characterizing the antibiotic activity of a test compound. However, as described below, there are a few concerns that could be addressed in order to strengthen the data presented and the conclusions drawn from these data.

Major Compulsory Revisions:

1. The strains used in the study are 42 consecutive clinical isolates from a single hospital. In many hospitals there is a dominant clone of A. baumannii that produces the majority of infections. Do the authors have any data with regard to the clonal relationship between the strains included in the study (i.e. PFGE or REP-PCR data). This data would be helpful since if all of the isolates tested are the same clone the results may be less generalizable than if the isolates consist of various clones. Along the same lines, the number of strains is fairly small, and the conclusions would be supported if additional strains (especially clonally distinct strains) were included in the study.

Minor Essential Revisions:

1. Figure 1 could easily be incorporated into Table 1 by placing an additional line of “% susceptible” at the bottom of the table.

2. Figure 2 shows routine results of Etest experiments. Since the authors explain the results in the test, this figure may not be necessary.

Discretionary Revisions:

1. Data addressing how AML affects the growth of A. baumannii would be interesting to include (i.e. growth curves of A. baumannii in the presence and absence of AML). Is it possible that AML simply slows down the growth rate of A. baumannii such that it appears resistant by broth microdilution after 24 hours of
incubation or that less imipenem is necessary to inhibit growth in synergistic experiments because the bacteria is growing more slowly?

2. In the abstract and the introduction the authors mention that they provide information on the possible mechanisms of action of AML. The data presented does not seem to shed much light on this issue so the authors may wish to soften these statements.

3. It would be interesting if the authors could comment on the relationship between the AML MIC values and the doses of AML permitted in humans.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Michael McConnell is founder and hold shares in the biotechnology spin-off company Vaxdyn. Vaxdyn develops novel therapies for drug resistant bacterial pathogens, including A. baumannii.