Early experiences using a real-time adherence monitoring device in HIV-positive patients in China

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The CATS Trial and the ‘Wisepill’ Device

The China Adherence through Technology Study (CATS) enrolled 120 ART patients from 12/12 – 4/13 for a 12 month trial. Subjects given a Wisepill device for one HIV medication; at 3 months, randomized to intervention (real time SMS reminders and Wisepill-informed counseling) vs. control. Wisepill device: uses a rechargeable battery (Fig. 1); creates date/time stamp at opening; transfers data to internet server.

Data Collection

Subjects: Socio-demographic and health history Self-reported adherence at 3 month visit. Views on Wisepill experience at 3 mos. Wisepill openings (first 3 months): Transmitted automatically via a website-based, secure account. Signal lapses ≥48 hrs investigated by phone to determine cause (technical failure from battery failure/forwarder malfunction or behavioral from missed dose/intentional non-use). CD4 and viral load data:

Acceptability of Wisepill Device

86.5% reported a very or somewhat positive overall experience with Wisepill: It is good in general. The pillbox itself could remind me to take my drugs on time. Compared with pill bottles, [Wisepill] is easier to open. Nearly all found the device ‘very easy’ (55.9%) or ‘somewhat easy’ (40.7%) to use. Most 58.8% said the device was inconvenient or very inconvenient to carry. It is big and conspicuous; it is inconvenient to carry. The pillbox is too thick and it makes it inconvenient to carry.

Acceptability of Wisepill Device

68.5% reported a very or somewhat positive overall experience with Wisepill: It is good in general. The pillbox itself could remind me to take my drugs on time. Compared with pill bottles, [Wisepill] is easier to open. Nearly all found the device ‘very easy’ (55.9%) or ‘somewhat easy’ (40.7%) to use. Most 58.8% said the device was inconvenient or very inconvenient to carry. It is big and conspicuous; it is inconvenient to carry.

The pillbox is too thick and it makes it inconvenient to carry.
Most were very or somewhat worried that using Wisepill would disclose their HIV status (58.0%); no disclosures were reported. When someone is beside me, I feel really uncomfortable opening the pillbox.
Most (95.8%) felt very or somewhat positive about someone monitoring their adherence. Knowing someone is looking helps me take my medication better.

Use of a real-time, web-linked ART adherence monitoring system is technically feasible in an urban Chinese clinic setting. Minor technical difficulties were encountered and easily addressed. Although acceptability to patients is not perfect, Wisepill shows potential for adherence interventions in HIV-positive populations.

Acknowledgements

Conclusions

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