BACKGROUND

Binge-eating disorder (BED) is a common psychiatric condition, affecting ~2% of the adult population and presents as the frequent, compulsive, excessive consumption of highly palatable foods. We have recently developed and pharmacologically characterized a rat model of BED in which rats that frequently fed on standard chow are given intermittent access to chocolate along with normal chow. Over a period of 4 weeks, the rats develop robust, binge-eating (BE) of the chocolate with concurrent reductions in their consumption of normal chow. Body weights remained at the same level as control rats maintained on normal chow. We have, therefore, proposed that this paradigm models BED without obesity (Vickers et al, 2015).

**RESULTS**

Figure 2 shows that (a) BE rats developed robust chocolate bingeing after ~2 weeks with concomitant reductions in chow intake the following day. (b) BE rats consumed ~50% of their daily food intake in the 2 hr binge and (c) BE and NB rats gained weight at the same rate. The responses of the NB controls did not vary over the course of the experiment. In contrast, BE rats responded significantly lower preference for the delayed reward, larger, delayed chocolate pellets than NB controls. This response of delayed reward resulted in BE rats preferring to press the smaller immediate reward. The impulsive responding of BE rats was abolished by LDX pretreatment demonstrating its ability to increase inhibitory control in BE rats when given access to chocolate.

**DISCUSSION**

BE rats showed an unequivocal lack of tolerance to delay for larger chocolate rewards in the delay-discounting task when compared against NB controls. This intolerance of delayed reward resulted in BE rats preferring to press for the smaller immediate reward. The impulsive responding of BE rats was prevented by LDX pretreatment demonstrating its ability to increase inhibitory control in BE rats when they were given access to chocolate.