

# **Fasting during Ramadan is associated with a higher recurrence rate in patients with bipolar disorder**

Fasting during the Ramadan month is a cornerstone of Islam. Several disturbances of biological rhythms have been reported in fasters during that month (1), but there is no consensus on the impact of fasting on patients with bipolar disorder (2,3).

We conducted a study in 170 patients with stabilized bipolar disorder (DSM-IV criteria), including 111 fasters and 59 non-fasters, targeting the Ramadan month of two successive years (2011 and 2012). Participants were recruited among outpatients at the Casablanca Ibn Rushd University Psychiatric Center. They were assessed for depression by the Hamilton Depression Rating Scale, for mania by the Bech-Rafaelsen Scale, for anxiety by the Hamilton Anxiety Rating Scale, for stress by the Perceived Stress Scale (4), for religiosity by the Religious Practices Index (5). Sleep and eating patterns, use of stimulants and other drugs, and plasma lithium levels were also assessed. The evaluations were conducted one week before the month of Ramadan (W-1), on the second and fourth week of Ramadan (W2 and W4), and two weeks after the end of the Ramadan month (W+2).

The mean age of patients was  $36.2 \pm 12.0$  years; 51.2% were women; 62.4% were single; 51.8% were professionally active. The number of mood episodes per year was  $0.72 \pm 0.45$ . All patients were under mood stabilizers; 81.2% were also receiving antipsychotics; 21 patients were also receiving antidepressants.

The relapse rate among fasters was 33.3% (37/111), including 14 relapses at W2 (7 manic and 7 depressive), 9 more at W4 (6 manic and 3 depressive) and 14 more at W+2 (13 manic and one depressive). The relapse rate among non-fasters was 15.3% (9/59), including 3 manic relapses at W2, 4 more relapses at W4 (1 manic and 3 depressive) and two more at W+2 (one manic and one depressive). The difference between fasters and non-fasters was statistically significant ( $\chi^2=6.38$ ,  $p=0.012$ ). Fasting during the Ramadan month increased the risk of relapse among bipolar patients by 2.77 fold in comparison to non-fasters (95% CI: 1.233 to 6.254,  $p=0.014$ ).

The number of sleeping hours decreased more significantly during the month of Ramadan among fasters (from  $9.39 \pm 1.45$  at W-1 to  $7.34 \pm 1.64$  at W4) as compared to

non-fasters (from  $9.92 \pm 1.28$  at W-1 to  $8.59 \pm 2.17$  at W4) ( $p<0.0001$ ). Coffee consumption during the month increased in fasters (from  $1.47 \pm 1.51$  cups at W-1 to  $1.94 \pm 1.94$  at W4) more than in non-fasters (from  $1.61 \pm 1.59$  cups at W-1 to  $1.76 \pm 1.75$  at W4), but the difference was not statistically significant. Serum lithium levels did not differ significantly between fasters (mean:  $0.57 \pm 0.65$  mEq/l at W-1 and  $0.65 \pm 0.71$  mEq/l at W4) and non-fasters (mean:  $0.57 \pm 0.11$  mEq/l at W-1 and  $0.64 \pm 0.75$  mEq/l at W4). After controlling for the number of sleeping hours, coffee consumption and serum lithium levels, the recurrence rate remained higher in fasters than in non-fasters.

This study suggests that fasting during the month of Ramadan may have a negative impact on patients with bipolar disorder. This could lead to preventive measures against relapses for persons with bipolar disorders in Muslim countries (more than 1 billion people worldwide). Studies on larger samples are needed to replicate these findings.

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## **References**

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