related & interpersonal distress. Diabetes Distress is associated with poor psychosocial well-being & self-management, depression, medication non-adherence, poor glycemic control, & diabetic complications. There is a shortage of literature on diabetes distress, in terms of original studies from Pakistan.
Objectives: To assess the prevalence of Diabetes Distress and its associated factors in Type 2 Diabetes Mellitus (T2DM) patients attending a teaching hospital.
Methods: This cross-sectional study was conducted at the Endocrinology clinic, Mayo Hospital Lahore Pakistan from November 2023 to May 2024. 254.
Type 2 Diabetes Mellitus patients, 30-80 years old, diagnosed according to American Diabetes Association diagnostic criteria at least 6 months before data collection were included. Those who had any terminal illness, substance dependence, active psychosis, or couldn't understand & speak Urdu were excluded. Diabetes Distress Scale-17 (DDS-17) was used for data collection. It has four dimensions & 17 items, each rated on a 6-point Likert scale. SPSS 26 IBM Corp was used for data analysis. Quantitative variables were presented as Mean (SD) & qualitative as f(%). The association of diabetes distress with various factors was elicited using the Chi-square test of independence at $\alpha \leq 0.05$.
Results: The mean age of the respondents was 53.62 ± 8.55 & duration of illness 8.86 ± 6.7. Mean DDS-17 scores were 2.732 ± 1.036 SD, equivalent to moderate level distress. Emotional Burden & Regimen-related distress had comparatively higher scores than Physician-related & interpersonal distress. 40.9% had high & 33.5% had moderate level distress. Only 25.6% of participants had little to no diabetes distress. There was no statistically significant relationship between diabetes distress severity & age, employment, marital status, & urban or rural living. There was a statistically significant relationship of diabetes distress severity with gender (p=0.001), education (p=0.05), socioeconomic status (p=0.01), & illness duration (p=0.05). Female gender, lack of education, and low & middle socioeconomic status had considerable association with greater severity of diabetes distress. Participants with < 1-year duration of diabetes distress had a higher proportion reporting little to no diabetes distress.
Conclusions: This study concludes that a considerable proportion had moderate to high level distress: emotional burden and regimen-related distress being of the utmost significance. The concerted efforts from all stakeholders will ensure early and timely screening of Diabetes Distress to avoid adverse psychosocial and patient outcomes. Integrating mental health with diabetes care in Pakistan could be the first step towards improving patient outcomes.

Disclosure of Interest: None Declared

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Serotonin reuptake inhibitors improve muscle stem cell function and muscle regeneration in male mice: antidepressant effects beyond the brain

M. Fefeu[1,2*], M. Blatzer[2], A. Kneppers[3], D. Briand[2], P. Rocheteau[2], A. Haroche[4], D. Hardy[2], M. Juchet Martin[2], A. Danckaert[2], F. Coudoré[5], A. Tutakhail[5], C. Huchet[6], A. Lafoux[6], R. Mounier[3], O. Mir[7], R. Gaillard[2,4] and F. Chrétien[2,4]

[1]Child and Adolescent Psychiatry Department and the Child Brain Institute, Hôpital Robert Debré, AP-HP; [2]Institut Pasteur, Paris; [3]Institut NeuroMyoGène, Lyon; [4]Hôpital Sainte Anne, GHU Paris Psychiatrie Neurosciences, Paris; [5]Université Paris Saclay, Chatenay-Malabry; [6]Université Nantes, Nantes and [7]Gustave Roussy, Villejuif, France
*Corresponding author.
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Introduction: Fluoxetine, the first selective serotonin reuptake inhibitor, is the world's most prescribed antidepressant. Several mechanisms of action underpin the effect of this antidepressant, such as enhancing serotonin (5-HT) neurotransmission, increasing hippocampal neurogenesis, neuronal survival and cerebral angiogenesis. The effects of fluoxetine on stem cell behaviour and tissue regeneration beyond the central nervous system have been little studied to date.
Objectives: We investigated whether fluoxetine (FLX) might have broader peripheral regenerative properties using a recognized regenerative medicine paradigm such as the animal model of ad integrum muscle regeneration.
Methods: To investigate the impact of fluoxetine (FLX) on muscle at steady state, FLX was delivered *per os* at 18 mg/kg daily for six weeks to uninjured wild-type and specific transgenic mice. To investigate FLX´s regenerative capacity on skeletal muscles, we delivered FLX for six weeks and then performed notexin-induced injuries (phospholipase that induces a severe muscle necrosis) of the *tibialis anterior* muscle in wild-type and specific transgenic mice. Muscle force, muscle stem cells number, dividing muscle stem cells, differentiating muscle stem cells number, vessels number and muscle fiber parameters were specifically assessed.
Results: After prolonged administration (6 weeks) of fluoxetine to male mice, we showed that prolonged FLX treatment increased the number of muscle stem cells and muscle angiogenesis in mice. FLX also improved skeletal muscle regeneration after single and multiple injuries induced by intramuscular notexin injection. The acceleration of muscle regeneration induced by FLX resulted from a triple action marked by an increase in the muscle stem cell pool, an increase in vessel density and a reduction in fibrotic lesions and inflammation. *In vitro*, we showed that the proliferative effects of FLX on immortalized myoblasts were dependent on 5-HT and 5-HT1B receptor activation. *In vivo*, mice lacking peripheral 5-HT treated with FLX did not show positive effects during muscle regeneration. Moreover, pharmacological, and genetic inactivation of the 5-HT1B receptor in muscle stem cells also abolished the FLX-induced improvement in muscle regeneration.
Conclusions: We show that FLX promotes a harmonious muscle regeneration underpinned by a combined action on myogenesis, angiogenesis and inflammation. These results highlight the serotonergic identity of skeletal muscle and point to a promising therapeutic strategy for endogenous muscle diseases. Beyond muscle and brain, this work opens new perspectives of investigation both on the role of serotonin and the 5-HT1B receptor in other types of stem cells and on the therapeutic potential of antidepressants in regenerative medicine.

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