Method Obese prone (OP) and obese resistant (OR) Sprague Dawley rats were respectively fed with a HFD and a standard diet (Std) for 16 weeks or 1year (4 groups, $n = 10$ per group). Feeding behaviour, caloric intake, body weight and systemic arterial pressure were weekly recorded. At the end of the protocol, abdominal obesity, glucose tolerance, lipidemia and blood pressure were compared between groups.
Results Despite, their high calorie diet, OP rats showed a higher daily food consumption and calorie intake. Plasma leptin was increased in OP-HFD (5.8 ± 0.5 ng/ml versus 1 ± 0.5 ng/ml in OR-Std, $P < 0.001$) suggesting a leptin resistance. Calorie intake was stable over time in the 2 groups. In the short protocol (16 weeks), OP-HFD rats presented already increased total body and abdominal fat weights, glucose intolerance, and increased plasma concentration of total cholesterol, triglycerides and nHDL/HDL ratio. Despite an overtime increase in systolic arterial pressure in the OP-HFD group, left ventricular systolic pressure was not increased at 16 weeks (117 + 6 versus 111 + 8 in OR-Std, NS). In the long protocol (1 year), obesity and glucose intolerance were still present, fasting blood glucose being still unchanged compared to the OR-Std group. Dyslipidemia (total cholesterol, triglycerides and nHDL/HDL ratio) was exacerbated compared to the short protocol and OP-HFD developed systemic hypertension (164 ± 6 vs. 120 ± 5 mmHg, $P = 0.001$).
Conclusion One year of HFD in Sprague Dawley rats selected for their predisposition to obesity leads to a reliable metabolic syndrome characterized by abdominal obesity, glucose intolerance, dyslipidemia and hypertension.
Disclosure of interest The authors declare that they have no competing interest.

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292

Effects of Ramadan fasting on blood pressure in hypertensive patients

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Introduction During Ramadan, repeated cycles of fasting and feeding might contribute to changes in blood pressure and heart rate among hypertensive patients. Studies on the effects of fasting on the blood pressure of hypertensive patients are scarce, and have provided inconclusive results.
Objective The aim of this study was to examine the effect of fasting on ambulatory blood pressure and heart rate in treated hypertensive subjects.
Method The study prospectively recruited 40 hypertensive patients between April and June 2019, and followed up at the cardiology department of Habib Thameur Hospital of Tunis. A 24 hour pressure monitoring was carried out during three periods: prior to Ramadan, during Ramadan, and one month after. SPSS version 20 was used to perform the statistical analysis. The paired Student's *t*-test was used to compare data within the 3 periods.
Results We studied 40 hypertensive subjects (65% women, 35% men), mean age was 57 ± 11years. Patients in the study group were using ACE inhibitors (15%), AT2 receptor blockers (17.5%), calcium channel blockers(17.5%), b-blockers(2.5%) and a combination treatment (47.5%). Average 24 h ambulatory blood pressure in the whole group was 129 ± 15/75 ± 8 mmHg before Ramadan, 127 ± 17/74 ± 8 mmHg during Ramadan and 126 ± 13/74 ± 7 in the following month ($P > 0.05$). Daytime and night time mean values of systolic and diastolic blood pressure were not different between the three periods. This study showed a significant improvement in the heart rate during the second period in comparison with the first one ($P = 0.03$).
Conclusion In this study, there were no significant changes in systolic and diastolic blood pressures during the 3 periods. There was a significant improvement in the heart rate during the ten last days of Ramadan, in comparison with the pre-Ramadan period. This suggest that fasting during the month of Ramadan, using the same medication might be non-threatening for patients with hypertension.
Disclosure of interest The authors declare that they have no competing interest.

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226

Who may benefit from diuretics in obstructive sleep apnea? A propensity score-matched cohort study

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Introduction Diuretics have been reported as effective for reducing obstructive sleep apnea (OSA) severity by preventing fluid retention and reducing rostral fluid shift. The benefit of diuretics might vary depending upon the OSA clinical phenotype and comorbidities.
Objective To test this hypothesis, we conducted a propensity score-matched cohort analysis of data from the French national sleep apnea registry ''Observatoire Sommeil de la Fédération de Pneumologie'' (OSFP).
Method A propensity score analysis was used to determine the impact of diuretics on OSA severity. Matching (ratio 1:4) was performed by using a 0.1 collider for propensity score. Severe OSA was defined as an apnea-hypopnea index (AHI) > 30 events/h and the usefulness of diuretics was assessed using a logistic regression model.
Results The 69,564 OSA patients studied in the OSFP prospective observational cohort had a median age of 56.9 years [Interquartile range (IQR): 47.4; 65.6], 67% were men, and the median AHI was 28 [14; 43] events/h. Among them, 9783 (14.1%) were treated with diuretics. Diuretics reduced OSA severity in overweight or moderately obese patients ($P = 0.03$) and in patients with hypertension ($P < 0.01$), particularly in hypertensives with a body mass index between 25 and 35 kg/m^2 ($P < 0.01$). Diuretics had no significant effect on OSA severity in patients with self-reported low physical activity or heart failure.
Conclusion Diuretics appear to have a positive impact on OSA severity in overweight or moderately obese patients with hypertension. Diuretics might be prioritized in combined therapies for hypertensive patients with OSA.
Disclosure of interest The authors declare that they have no competing interest.

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