The in fluence of short-term and prolonged glucocorticosteroid therapy of immunoinflammatory diseases on carbohydrate metabolism

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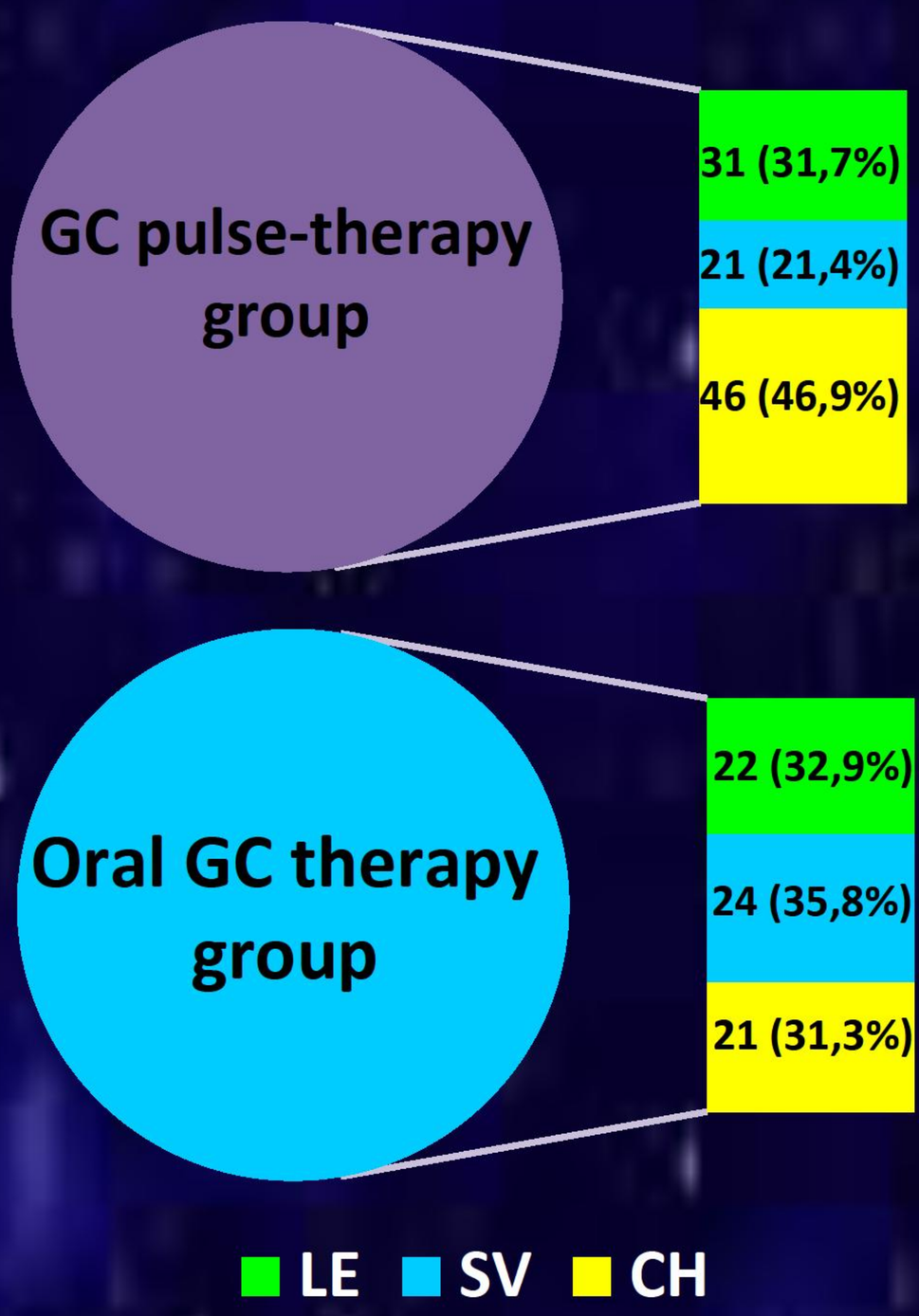
The duration and doses of glucocorticoids (GC) are significant prognostic factors of carbohydrate metabolism disturbance (CMD).

Description of methods:

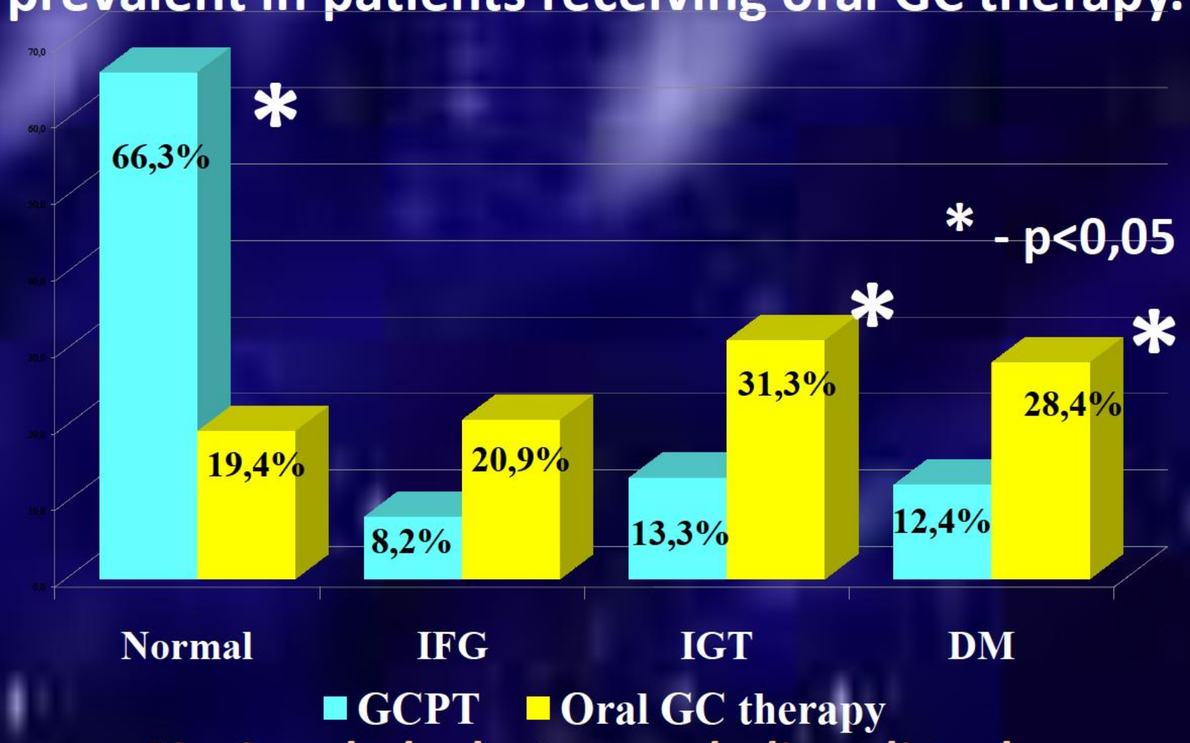
165 patients with systemic lupus erythematosus (32,1% patients), systemic vasculitis (27,3% patients) and chronic glomerulonephritis (40,6% patients) were included. 98 patients received GC pulse-therapy (GCPT) (1st group), which included intravenous infusion of prednisolone 10-15 mg/kg a day with 250 ml of 0,9% NaCl solution, on 3 consecutive days; course dose was 1800—3000 mg; 67 patients (2nd group) received oral GC therapy 15-30 mg/day. All patients passed an oral glucose tolerance test (OGTT) after the course of GCPT in the first group and after 5 days of hospital stay in the second group. An evaluation of CMD was performed.



Pic. 1 Diagnosis distribution in groups

Results

The study revealed that the incidence of CMD depends on the mode of GC therapy and does not depend on the type of immunoinflammatory disease. CMD was more prevalent in patients receiving oral GC therapy.



Pic. 2 carbohydrate metabolism disturbance in studied patients

CMD was observed in 33 (33,7%) patients, receiving GCPT and in 54 (80,6%) patients, receiving oral GC (p=0,035). Impaired fasting glucose (IFG) (<7,8 mmol/l 2 hours after OGTT, high fasting glucose at baseline 5,5-6,1 mmol/l) was found with similar incidence in 1st and 2nd groups (8 (8,2%) and 14 (20,9%), respectively) (p=0,069). Impaired glucose tolerance (7,8 to 11,1 mmol/l 2 hours after OGTT) and diabetes mellitus (≥11,1 mmol/l 2 hours after OGTT) were more prevalent in the second group – in 21 (31,3%) and 19 (28,4%) patients, compared to 13 (13,3%) and 12 (12,2%) patients in the first group, respectively (p=0,038 and p=0,049).

Conclusions

CMD develop more often in patients with immunoinflammatory diseases receiving long-term oral GC therapy, compared to patients on GCPT. All patients should be regularly screened for CMD and receive necessary correction.

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