Corticoid-associated complications in elderly

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Les complications du traitement corticoïde chez les sujets âgés

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RÉSUMÉ

Prérequis : Les corticoïdes sont des produits largement prescrits chez le sujet âgé en particulier dans les maladies systémiques. Les anti-inflammatoires stéroïdiens, surtout quand ils sont utilisés au long cours en gériatrie ne sont pas dénués d'effets indésirables et de complications du fait, en partie, des modifications physiologiques de la sénescence.

But : Evaluer la fréquence et le type d'effets indésirables et de complications du traitement corticoïde au long cours chez les sujets âgés.

Méthodes : Nous avons réalisé une étude rétrospective à propos de 23 patients âgés de 65 ans et plus hospitalisés dans le service de médecine interne de l'hôpital Habib Thameur durant la période de janvier 2000 à décembre 2004.

Résultats : Il s'agit de 20 femmes et 3 hommes âgés de 66 à 87 ans avec un âge moyen de 75.7 ans. Les diagnostics retenus sont 8 cas de maladies de Horton, 7 cas de polyarthrite rhumatoïde, 3 cas de myélome multiple, 2 cas de sclérodermie, 1 cas de lupus érythémateux systémique, 1 cas de fibrose rétro péritonéale et 1 cas de rhumatisme psoriasique. Nous avons retenu 66 complications. Les complications infectieuses ont été trouvées dans 26 cas soit 39.3%. Un diabète iatrogène a été répertorié dans 11 cas soit 16.7%, une hypertension artérielle dans 9 cas soit 13%, les complications osseuses dans deux cas, les complications psychiatriques dans deux cas, les complications oculaires dans un cas.

Conclusion : Malgré les règles hygiéno-diététiques et un traitement adjuvant, les complications semblent être fréquentes. Afin de limiter les inconvénients de la corticothérapie prolongée, une surveillance régulière et minutieuse est impérative pour les dépister et les prendre en charge à temps.

Mots-clés
Effets indésirables – complications – corticoïdes – sujet âgé

SUMMARY

Background: Corticosteroids are widely prescribed products in the elderly particularly in systemic diseases. Corticosteroids were indispensable in controlling a variety of disease states. Various complications associated with this drug class warrant caution and monitoring with each formulation especially with old population.

Aim: To evaluate the frequency and type of side effects and complications of long-term corticosteroid therapy in the elderly.

Methods: We conducted a retrospective study of 23 patients aged 65 and older hospitalized in the internal medicine department of the Habib Thameur hospital during January 2000 to December 2004. Corticoid adverse effects were recorded throughout the follow up period.

Results: There are 20 women and 3 men aged 66 to 87 years with a mean age of 75.7 years. The diagnoses were 8 cases of temporal arteritis, 7 cases of rheumatoid arthritis, 3 cases of multiple myeloma, 2 scleroderma, 1 case of systemic lupus erythematosus, 1 case of retroperitoneal fibrosis and 1 case of psoriatic arthritis. We selected 66 complications. Infectious complications were found in 26 cases (39.3%), 11 cases (16.7%) of iatrogenic diabetes, arterial hypertension in 9 cases (13%), skeletal complications in both cases, psychiatric complications in two cases, ophthalmologic complications in one case.

Conclusion: Despite lifestyle rules and adjunctive therapy, complications seem to be frequent. To minimize the disadvantages of prolonged corticosteroid treatment, regular monitoring and careful screening is imperative for the support and time.

Key-words
Side effects - Complications - steroids - elderly

Corticosteroids have been in use for longer than 40 years. Over time they have become indispensable in controlling a variety of disease states. Currently, glucocorticoids (GC) are available in numerous formulations: oral, topical, ophthalmic solutions and ointments, oral inhalers, nasal formulations, parenteral and rectal preparations. Various complications associated with this drug class warrant caution and monitoring with each formulation especially with old population.

The aim of our study was to evaluate the frequency and type of side effects and complications of long-term corticosteroid therapy in the elderly.

PATIENTS AND METHODS

We conducted a retrospective study of 23 patients aged 65 and older hospitalized in the internal medicine department of the Habib Thameur hospital during January 2000 to December 2004. Corticoid adverse effects were recorded throughout the follow up period. We selected as inclusion criteria: an age greater than or equal to 65 years, at least one hospitalization during the included period, the indication of a general glucocorticoid treatment on long-term excluding inhaled and topical corticosteroids. We noted for each patient: the age, sex, the medical history, the reasons for hospitalization, clinical features, the paraclinical explorations conducted, the diagnosis retained. We systematically analyzed the prescription of treatment and the treatment protocol described by specifying: the type of drugs used, the type of use (oral or IV bolus), the period of the different phases in particular the treatment time of attack, levels of degression and maintenance therapy, the dose used during each phase in mg / kg / day, the terms of degression, the occurrence of relapses, the evolutionary times and recurrence. We evaluated in our patients, the side effects and complications that occurred during the evolution recalling the therapeutic adjuvant used. Data were entered using Excel software and analyzed using SPSS version 11.5.

RESULTS

There are 20 women and 3 men aged 66 to 87 years with a mean age of 75.7 years. The diagnoses were 8 cases of temporal arteritis, 7 cases of rheumatoid arthritis, 3 cases of multiple myeloma, 2 scleroderma, 1 case of systemic lupus erythematosus, 1 case of retroperitoneal fibrosis and 1 case of psoriatic arthritis. We selected 66 complications (table 1). Infectious complications were found in 26 cases (39.3%): 2 viral infection, 7 fungal infection and 17 bacterial infection including 4 urinary infection, 3 bronchopulmonary infection, 3 skin infection, 2 Otorhinolaryngologic infection, 2 stomatological infection, one osteoarticular infection, one gastrointestinal infection and one case of reactivation of latent tuberculosis (table 2).

Among the metabolic complications we identified 11 cases (16.7%) of iatrogenic diabetes that is aggravated by corticosteroids in 6 cases or discovered during treatment in 5 cases. High blood pressure (hypertension) aggravated or induced by corticosteroid treatment has been notified in 9 patients (13%). Osteoporosis is reported in 2 cases (3%), depression in 2 cases (3%), cataracts in one case.

Table 1: Complications of corticosteroids

Complications	Number	%
Infections	26	39.3
Iatrogenic diabetes	11	16.7
Arterial hypertension	9	13
Osteoporosis	2	3
Depression	2	3
Cataracts	1	1.5

Table 2: Infectious complications

Aetiology	Localization	Type	Number (26)
Viral	-	Herpes zoster	2
Bacterial	Pulmonary		
		Disease of the lungs	3
	Urinary	Reactivation of	1
	Cutaneous	tuberculosis	
	Osteoarticular	Urinary infection	4
	Otorhinolaryngologic	Erysipelas	3
	Gastroenterologic	Septic osteoarthritis	1
	Stomatologic	Sinusitis	2
	-	Intestinal infection	1
		Dental abcess	2
Mycotic			
		Eczema marginatum	1
		Intertrigo	3
		Onyxis	2
		Otitis	1

DISCUSSION

As in literature, infectious complications were most common in our study followed by metabolic complications. Infectious complications concern particularly systemic diseases such as vasculitis or giant cell arteritis or connective tissue such as rheumatoid arthritis or lupus erythematosus, infection being the leading cause of death in the last (1). Thus in a study on complications due to steroid therapy in 164 patients aged 75 and older and suffering from temporal arteritis, it is reported a total of 111 complications, including infectious complications in first place with 31 cases and 20 cases of pulmonary infection (2). In contrast a second study reviewing the complications of

corticosteroid therapy in giant cell arteritis and polymyalgia rheumatica, including a total of 500 patients from five different studies, found a low number of infectious complications: total 9 patients including 7 cases of herpes zoster (3). In rheumatoid arthritis, many infections are deplored, even with steroids at a dose below 10 mg / day (4). In the literature, it was found a significant number of observations describing severe infections (shingles, fungus ...) in addition to several seasonal episodes of viral origin not listed in the remaining part of this disease (5). In a series about the adverse effects of corticosteroid therapy in rheumatoid arthritis there are three more severe infections in the group treated with corticosteroids in the long term than in the group not receiving cortisone and infectious complications in head side effects. In total in this series, 8 patients with herpes zoster were identified, 5 of pneumonia, 4 of septic arthritis and two cases of urinary tract infections among a total of 22 severe infections (5). On the other hand, we must insist on the morbidity of corticosteroids in systemic lupus erythematosus (6, 7). Although our sample is small, our results are comparable to those of Chevalet et al (2), infections account for 39.3% of total complications of long-term corticosteroid treatment in our series.

Among the metabolic complications we identified 11 cases (16.7%) of iatrogenic diabetes that is aggravated by corticosteroids in 6 cases or discovered during treatment in 5 cases. According to Agard and Barrier, diabetes affects 10% of patients with giant cell arteritis. Treatment based on the diabetic diet and insulin therapy should be preferred to oral anti diabetic (8). Corticosteroids, even at low doses, can reveal diabetes justifying minimum carbohydrate restriction, or exacerbate pre-existing diabetes need to temporarily use insulin (9).

High blood pressure (hypertension) aggravated or induced by corticosteroid treatment has been notified in 9 patients for a rate of 13%. For 5 of them it was the aggravation of hypertension requiring capacity of previous antihypertensive treatment. For the other 4, she appeared in during processing for the initiation of a sodium diet or an antihypertensive. Hypertension is more frequent during steroid treatment, but its relationship with dose and duration of treatment is unclear. Preexisting hypertension appears to be a risk factor. That's why thiazide diuretics are recommended in the first place (10). Hypertension is the most important parameter to monitor. According to Agard and Barrier (8), it is often pre-existing in giant cell arteritis and is aggravated in 15 to 30% of cases which requires increasing the antihypertensive treatment. Among our 23 patients, we observed a case of femoral neck fracture occurred in the 7th month of corticosteroid therapy in a woman of 72 years treated for temporal arteritis at a dose of 10 mg per day and treated by nail plate with secondary loosening. This incident suggests an iatrogenic cause. A second patient had clinical features suggestive of vertebral fracture associated with radiographic images confirming the diagnosis. This complication is associated with taking long-term steroids as in its history not found the concept of vertebral collapse. According to some authors, the side effects of corticosteroid therapy in giant cell arteritis is more common in patients aged 75 years and those receiving at least 40 mg per day prednisone treatment in attack (5). Also in a meta-analysis combining 11 studies collecting more than 1,000 patients a side effect of steroids was noted in 29% and a complication in 10% of rheumatology cases (8). The glucocorticoid-induced osteoporosis is the most common complication of temporal arteritis for at least 10% of patients and 15% at one year of treatment of those aged over 75 years. Rheumatological complications related to corticosteroids are the majority after 75 years and may be delayed. Within a group of 229 people treated with prolonged corticosteroid therapy, it was observed a prevalence of 46% of vertebral fractures in the age group 70-79 years vs. 32% in a group not using steroids, and respectively 60% versus 40% after 80 years. The subjects of 70-79 years have a slice fracture risk vertebral 5 times higher than those less than 60 years (11). In two of our patients (8.6%), we observed the appearance of a table with depressive mood, character and behavior. According to some authors psychiatric disorders do not appear increased with low doses of cortisone (2). In a series involving subjects aged 75 years, psychiatric complications have been reported in 13 cases including 7 cases of depressive syndromes, 6 cases of agitation with confusion or mania (2). In giant cell arteritis, of 126 subjects, 20 patients (16%) had psychiatric complications with corticosteroids. The onset disorders occur most often in the first month of treatment, taking on various tables such as: mood with irritability, sleep disorder, depression, manic states syndrome and anxiety disorders in vascular dementia (12). The systematic implementation of a Mini Mental State or Geriatric Depression Scale in all patients receiving prolonged oral corticosteroids especially before the onset of rapid cognitive decline or psychiatric symptoms especially in patients treated for giant cell arteritis should help target surveillance of subjects at risk (12). We found one case of steroid-induced cataracts diagnosed in the 42nd month of corticosteroid therapy in a patient treated for rheumatoid arthritis. Eye problems are mainly represented by a posterior sub capsular cataract did not tend to regress to the withdrawal of corticosteroid therapy even at low doses (5). Cataract is deemed to be a complication of high dose corticosteroids or related to the total dose and duration of treatment. This complication is reported also with low dose but it is not common. Its relative risk is 1.8 to 2.5 times higher in prolonged steroid treatment (13). Mucocutaneous disorders are linked to metabolic disturbances and obesity by combining a fat overload or facial-nerve block reported in one case. These disorders related to treatment are more difficult to prevent since they are often also linked to the condition being treated long-term (14).

CONCLUSION

GC are among the most commonly prescribed agents in clinical practice. Their varied physiologic effects make them ideal agents for treating several disease states. Infectious and metabolic complications were the most common in our study. Physician education on risk factors might improve prescribing GC for elderly. The knowledge of drug-use patterns is extremely important particularly in aged-population who is a

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