Role of Specialty Care in the Management of Patients with Systemic Lupus Erythematosus

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ABSTRACT. ***Objective.*** To determine the role of rheumatologists in the management of systemic lupus erythematosus (SLE).

Methods. The lupus clinic database was searched for patients with 3 consecutive visits (every 3–4 months) of which the first 2 visits recorded a SLE Disease Activity Index (SLEDAI) of 0. The clinic notes were examined by a physician blinded to the SLEDAI score at the third visit. The physician classified the rheumatologist's action by the following scale: 1 = no change, 2 = closer followup, 3 = new investigations, 4 = increase medications, 5 = lower medications. All interventions (2–5) were further scored as being related to or independent of SLE.

Results. Of the 142 SLE patients identified, 70 patients remained inactive (SLEDAI = 0) and 72 patients experienced flare (SLEDAI > 0) at the third visit. In total, 74% of patients, regardless of the status of disease activity, required intervention; 96% of interventions in patients with clinical flare, 72% with serological flare, and 63% with inactive disease were due to management of SLE. The most frequent intervention related to SLE in patients with clinical flare was increasing medication, while in inactive SLE lowering medication was the most common intervention.

Conclusion. Even after a period of relative disease quiescence the majority of patients with lupus require active intervention during a subsequent routine clinic visit. Most interventions are related to the management of SLE. Therefore ongoing monitoring by rheumatologists in the management of lupus seems prudent. (J Rheumatol 2002;29:1207–10)

Key Indexing Words:
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Recent changes in health care policies have resulted in a proposed shift toward the primary care physician managing relatively rare complex diseases, while the role of specialty care is under scrutiny. This approach may have particular relevance to patients with systemic lupus erythematosus (SLE). SLE is a chronic inflammatory autoimmune disease of unknown etiology with protean manifestations and a variable course and prognosis[1]. It is characterized by periods of relative quiescence and periods of exacerbations. Despite recent improvements in diagnosis and treatment of this condition, the mortality of patients with SLE is still more than 3 time that of the general population[2]. Therefore appropriate guidelines to improve management remain relevant.

The recent American College of Rheumatology (ACR) guidelines for referral and management of SLE in adults, of which 2 of the current authors, Dr. M. Urowitz and Dr. D. Gladman, were coauthors, recommend that patients with moderate to severe disease be followed by rheumatologists but that patients with mild disease may be monitored by primary care physicians[3]. However, subsequent experience and recent literature evidence in a number of rheumatic diseases would question this approach[4-7] both for issues directly related to the rheumatic disease and for issues not directly related, for example, treatment of hypertension and osteoporosis.

We investigated the importance of the rheumatologist in the ongoing management of patients with inactive SLE, who according to the guidelines could be followed by the primary care physician.

MATERIALS AND METHODS

Study setting. The University of Toronto Lupus Clinic has been following patients prospectively at 2–4 month intervals according to a standard protocol since 1970. At each visit a complete history, examination, and laboratory evaluation are carried out and the SLE Disease Activity Index (SLEDAI, a validated method of assessing disease activity in SLE[8]) score is calculated. All information has been entered on a computerized database. At the time of this study, 850 patients had been registered in this observational cohort study.

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Patient population. Patients with 3 consecutive visits at 3–4 month intervals in which the first 2 visits recorded a SLEDAI of 0 (clinically and serologically inactive for 6–8 months) were included in this study (serologically active refers to positive anti-DNA antibodies and/or low complement level).

Assessment. For each patient the clinic notes of the third visit were reviewed by an independent physician blinded to the purpose of the study and SLEDAI scores. This blinded assessor evaluated the intervention of the treating rheumatologist according to the following categories: no intervention; closer followup (an appointment earlier than the usual followup either by the primary care physician, rheumatologist, or other appropriate specialist); new previously unplanned investigations performed (blood investigations, radiology, or other relevant investigations); increased amount or addition of new medication, including lupus related therapies (nonsteroidal antiinflammatory drugs, antimalarials, corticosteroids, other immunosuppressive agents) or other medications (antihypertensives, cholesterol lowering agents, etc.); decreased amount or withdrawal of medications. All interventions were further scored as related to or independent of the SLE process.

Analysis and statistics. The SLEDAI score[8] at the third visit was then calculated from the computer database and the patients were divided into 2 groups, i.e., those with active (SLEDAI > 0) and inactive (SLEDAI = 0) disease.

The characteristics of the 2 groups (active/inactive) were compared using simple statistics.

RESULTS

One hundred forty-two patients seen between 1995 and 1999 who had 2 consecutive visits 3–4 months apart with no disease activity (SLEDAI = 0) were identified from the clinic database. The activity of their lupus was similar to our larger cohort (Table 1). At the third assessment, 70 patients remained inactive (SLEDAI = 0) and 72 had evidence for active disease (SLEDAI > 0). The demographic characteristics of patients with active and inactive disease at the third visit were similar (Table 2). Of the 72 patients who were found to be active at the third assessment, 50 had clinical activity with or without serological activity and 22 had serological abnormalities only.

After a period of 6–8 months of clinical quiescence three-quarters of all patients (105/142), whether active (clinically or serologically) or inactive, underwent medical intervention (Table 3). Some patients had more than one intervention; 56% to 95% of the interventions were related to SLE disease process (Table 3). In patients with active SLE, closer followup or additional investigations were instituted in 16 of 56 patients, and therapy adjustments were made in 40 (Tables 3 and 4). In patients with inactive SLE, closer followup or additional investigations were instituted in 26 of the 59 patients, and 33 patients had therapy adjustments (Table 4).

DISCUSSION

Recent guidelines for referral and management of adult patients with SLE suggest that the primary care physician has 4 major tasks in diagnosis and management of this condition: (1) To be alert to the possibility of SLE in their patients and make the diagnosis as early as possible. (2) To manage and monitor patients with SLE who have mild and stable disease (i.e., those without major organ involvement or comorbidity). (3) To recognize when referral to the rheumatologist is indicated. (4) To collaborate with the specialist in monitoring disease activity and therapy in

Table 1. SLE in patients included in this study compared to the larger cohort.

	Study Group	Cohort Group	p
Sample size	142	808	
Sex, Female (%)	123 (87)	708 (88)	0.739
Race			
Caucasian/Black/other	107/16/19	666/54/84	0.076
Age at diagnosis, yrs, range (mean ± SD)	10–74 (33 ± 14)	8–83 (33 ± 14)	0.904
SLEDAI at presentation, range (mean ± SD)	0–38 (9.35 ± 7.42)	0–56 (10.38 ± 8.81)	0.141
Age at study, yrs, range (mean ± SD)	14–77 (41.4 ± 14.2)	NA	NA
Disease Duration at study, yrs, range (mean ± SD)	0–46 (8.4 ± 8.2)	NA	NA
Main manifestations, n (%)	*	**	
Skin	121 (85)	704 (87)	0.509
Musculoskeletal	89 (63)	509 (63)	0.928
Renal	103 (73)	576 (71)	0.778
CNS	71 (50)	376 (47)	0.453
Vasculitis	43 (30)	252 (31)	0.822
Pulmonary	20 (14)	178 (22)	0.031
Cardiac	23 (16)	135 (17)	0.875

* At any time prior to study; ** at any time to last visit. NA: not applicable, CNS: central nervous system.

Table 2. Characteristics of study population.

	SLEDAI = 0	SLEDAI > 0	p
Sample size	70	72	
Sex, Female (%)	58 (83)	65 (90)	0.194
Race			
Caucasian/Black/Other	54/7/9	53/9/10	0.868
Age at diagnosis,yrs,			
range (mean ± SD)	12–74 (35.2 ± 14.4)	10–66 (30.9 ± 13.4)	0.067
Age at study, yrs,			
range (mean ± SD)	14–77 (43.1 ± 14.6)	20–74 (39.8 ± 13.7)	0.167
Disease Duration at Study, yrs,			
range (mean ± SD)	0–39 (7.87 ± 8.70)	0–46 (8.88 ± 7.81)	0.471
SLEDAI at presentation,			
range (mean ± SD)	0–38 (8.17 ± 6.64)	0–37 (10.50 ± 8.00)	0.062
Main manifestation prior to study, n (%)			
Skin	57 (81)	64 (89)	0.211
Musculoskeletal	39 (56)	50 (69)	0.091
Renal	44 (63)	59 (82)	0.011
CNS	30 (43)	41 (57)	0.093
Vasculitis	20 (29)	23 (32)	0.662
Pulmonary	7 (10)	13 (18)	0.168
Cardiac	12 (17)	11 (15)	0.763

CNS: central nervous system.

Table 3. Interventions by clinician at visit after disease quiescence.

Activity	No. with Intervention, 105 (%)	No. of Interventions	No. Related to SLE (%)
Inactive (SLEDAI = 0), n = 70	53 (76)	59	33 (56)
Clinical and serological, n = 50	36 (72)	38	36 (95)
Serological only, n = 22	16 (73)	18	12 (67)

Table 4. Interventions in patients with SLE.

Level	Clinical ± Serological, n = 38 (%)	Serological Only, n = 18 (%)	Inactive, n = 59 (%)
Close followup	5 (13)	0 (0)	13 (22)
Investigations	9 (24)	2 (11)	13 (22)
Increase/add new	13 (34)	5 (28)	9 (15)
Decrease/withdraw medication	11 (29)	11 (61)	24 (41)

patients with moderate to severe SLE. Thus after initial suspicion and referral for confirmation of the diagnosis of SLE the major role of the primary care physician was suggested to be in monitoring stable disease. We evaluated the outcome of SLE patients with no active disease for 6–8 months for whom the guidelines would suggest management by a primary care physician is appropriate. We chose a SLEDAI = 0 as indicating inactive lupus disease, as the SLEDAI comprises the clinical and laboratory variables determined by experts to be the usual features of active disease. Even in such patients more than half were found to have active disease within the following 3 months. In these patients, three-quarters required interventions, which in the vast majority were related to the SLE disease process. This pattern is in keeping with the frequency of flares of 60–80% per year in patients with SLE reported by us[9,10] and by others[11]. Further, prolonged complete remission defined as absence of clinical and serologic activity and no lupus therapy for 5 years is rare in SLE, occurring in only 1.6% of patients[12,13]. Even among 156 patients defined as having achieved remission by Drenkard, *et al*[14] on the basis of at least one year during which lack of clinical disease activity permitted withdrawal of all treatment for lupus, 50% subsequently flared, and half of those did not achieve a remission again.

In this study, even in patients who remained inactive at the third visit, 56% required interventions related to the SLE, usually adjustment of corticosteroids or immunosuppressive drug dosages.

Patients with longstanding SLE accumulate damage from either the disease process itself or its therapy[15], and this damage may accumulate in a subclinical manner for months or years before manifesting itself clinically. Thus patients with SLE may develop progressive renal failure without overt clinical manifestations. Premature atherosclerotic disease[16] complications such as angina and myocardial infarction are preceded by long periods of hypercholesterolemia[17] and hypertension and chronic neurocognitive dysfunction presents subtly over time[18]. Clinicians attuned to these features are more likely to diagnose and intervene sooner.

Primary care physicians are unaccustomed to formal disease activity assessment in SLE such as the scoring of the SLEDAI or other disease activity measures, and thus may not be able to adequately ascertain the status of disease activity in an individual patient at each clinic visit. Further, the clinical assessment necessary to complete the disease activity score requires specific expertise and adequate time. Studies in rheumatoid arthritis (RA) have indicated an advantage for rheumatologist care over that of primary care physicians[4,5]. A recent review of the management of RA has shown that in-depth knowledge of the disease and its potential treatment are needed to optimize treatment and coordinate multidisciplinary care[6]. The same requirements would be true of SLE, a less common and perhaps more complicated connective tissue disease. Further, the recent study by Yood, *et al*[7] has shown that "women and patients prescribed glucocorticoids by a rheumatologist were significantly more likely to receive intervention aimed at osteoporosis prevention" — a consequence of disease and its therapy — compared to other physicians.

A criticism of our approach may be that there has been no direct comparison of the management of patients with SLE by specialists and primary care physicians. Such a study of necessity would have to be retrospective and difficult to derive, as primary care physicians do not ordinarily maintain a database of relatively rare complex diseases to facilitate comparison of outcomes with patients treated by rheumatologists. Further, to construct a prospective study of specialist versus primary care physician management would be contrived, as it would not mimic the usual primary care practice. In addition, large numbers of patients would be required to reveal a difference in outcomes for the 2 health care provider approaches.

Our study indicates that even patients with inactive SLE disease activity may change their status rapidly, requiring specific expertise to recognize changes and manage them appropriately. We therefore suggest that the SLE management guidelines for patients with inactive disease be modified to include at least concurrent care by the rheumatologist.

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