

Lupus among Filipinos: Unmet needs

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Abstract

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease with a wide range of manifestations and potential to affect several organ systems. Complications arise from the disease itself as well as the medications especially glucocorticoids, significantly contributing to overall morbidity and mortality. SLE predominantly affects patients during prime productive years resulting in a substantial economic burden on the patient, caregivers, and society due to direct, indirect and intangible costs. The University of Santo Tomas (UST) lupus database established in 2008 and supported by Lupus Inspired Advocacy (LUISA), aims to bring recognition of SLE as an important disease among Filipinos, serving as the impetus to drive policy makers to include SLE in the national health agenda.

Keywords: lupus, filipinos, unmet needs

Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by production of autoantibodies and other protein products contributing to inflammation and tissue damage. Although the exact etiology is unknown, genetic and environmental factors including viral infections play a significant role in disease pathogenesis and expression.^{1,2,3} SLE presents in various ways and potentially affects any organ system, resulting in highly variable clinical disease course which differs among individuals even with similar organ system involvement. This broad range of manifestations poses a diagnostic and management challenge to every clinician dealing with every patient, requiring highly individualized healthcare delivery by specially trained physicians like rheumatologists.

University of Santo Tomas Rheumatology patient census

As one of the two oldest and currently five accredited training rheumatology institutions throughout the country, the University of Santo Tomas (UST) has kept and updated a patient census since 2008, transitioning from paper format to electronic password-protected files, secured by a designated data manager. All patient data are kept confidential, and access to de-identified patient data is made available to rheumatology staff with individual research studies approved by the UST Hospital Institutional

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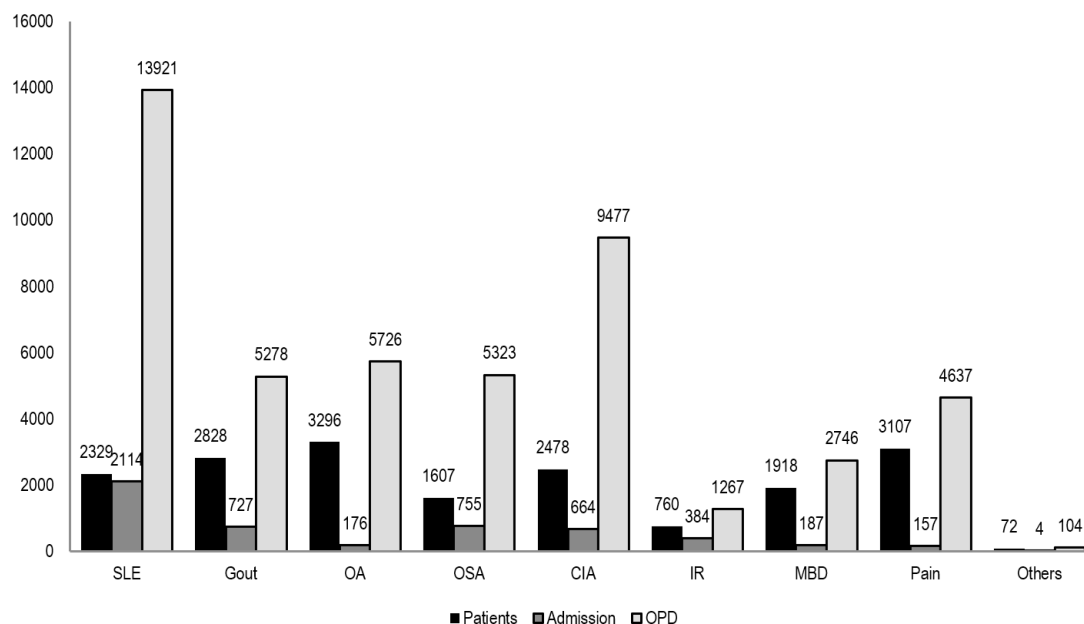
Review Board – Ethics Committee. The patient census of UST rheumatology from 2008 to 2017 includes a total number of 18,395 patients and total 53,480 patient encounters including out-patient consultations and hospitalizations. Of these, systemic lupus erythematosus (SLE) ranks fifth in number of patients but records the highest number of patient encounters in both out-patient clinics and hospitalizations (Figure 1).⁴ The demographic features of the top five rheumatic diseases at UST rheumatology clinics are outlined in Table I, with SLE affecting a relatively younger population with a strong female predominance.

UST lupus database

Aligned with the census of rheumatic diseases, UST rheumatology also formally established the UST lupus database in 2008. As of December 2017, the database included 2,329 patients (94% females), consisting of 1,677 adult (72%), and 652 pediatric (28%) patients with mean age at diagnosis of 27.6±12.6 SD years (range 4-77 years old) (Figure 2).³ Consistent with worldwide literature, SLE predominantly affects young females in their reproductive age, although males, children and the elderly may be affected as well.

Morbidity, mortality and illness burden indicators

The UST lupus database has become a rich data source for various studies looking into factors contributing to morbidity, mortality and other burden of illness indicators. Figure 3 shows the top three most commonly involved organ systems as mucocutaneous (121, 95%), musculoskeletal (113, 89%) and renal (87, 68.5%).⁵



SLE-Systemic lupus erythematosus; OA-Osteoarthritis; OSA-Other systemic autoimmune diseases; CIA-Chronic inflammatory arthritis; IR-Infection related; MBD-Metabolic bone disease

Figure 1. Number of patients (N=18,395) and patient encounters (N=53,480) for various rheumatic diseases at UST rheumatology clinics, 2008-2017

Table I. Age and gender distribution of top five common rheumatic diseases at UST rheumatology clinics from 2008-2017 (N=18,395)

Rheumatic disease	Total n (%)	Female n (%)	Male n (%)	Age in years mean±SD (range)
Osteoarthritis	3,296	2,642 (80)	654 (20)	62.95±12.73 (7-101)
Local pain syndromes	3,107	2,122 (68)	985 (32)	44.77±19.56 (2-100)
Gout	2,828	562 (20)	2,266 (80)	55.00±15.54 (17-94)
Chronic inflammatory arthritis	2,478	1,688 (68)	790 (32)	40.55±21.36 (1-98)
Systemic lupus erythematosus	2,329	2,198 (94)	131 (6)	27.6±12.6 (4-77)

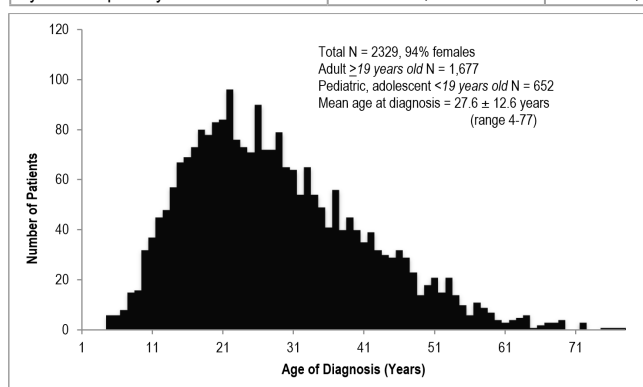


Figure 2. Demographic profile of patients included in the University of Santo Tomas (UST) lupus database 2008-2017

A major contributor to SLE morbidity and mortality is uncontrolled SLE disease activity especially renal involvement. SLE accounts for the highest frequency of hospitalizations among the rheumatic diseases, with patients being admitted to the hospital usually because of severe disease flare especially nephritis (Table II). Infections with or without disease activity rank second as reason for hospitalization, followed by kidney biopsy and renal failure requiring dialytic therapy.⁶

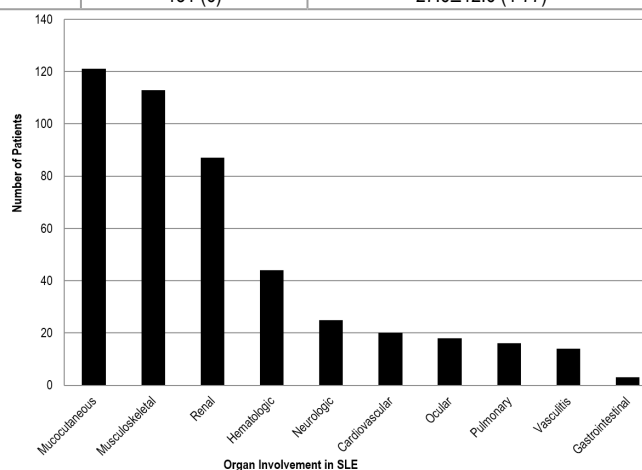


Figure 3. Organ involvement among Filipino patients with SLE (N=127)

Renal involvement is a major predictor of poor survival and quality of life in SLE. In addition, hypertension and diabetes mellitus prior to SLE were strongly associated with progression to end-stage renal disease (ESRD), underscoring the need to aggressively control these co-morbidities as early and as aggressively as possible, also considering that these co-morbidities may be further aggravated by glucocorticoid use.⁷

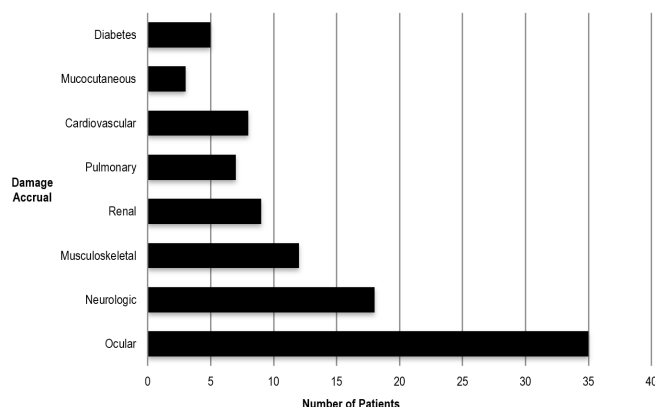


Figure 4. Damage accrual among Filipino SLE patients (N=127)

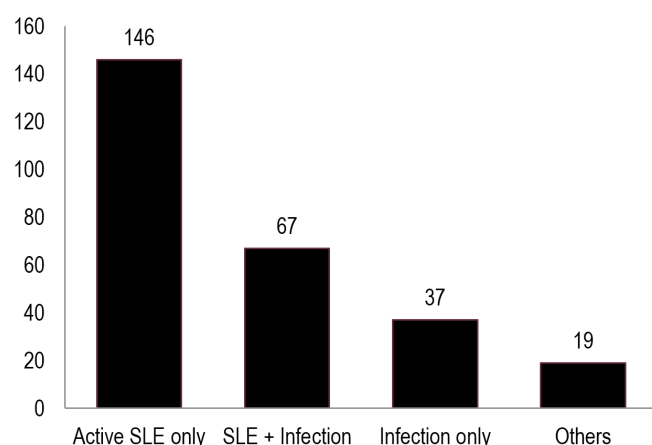


Figure 5. Causes of death among Filipino SLE patients (N=269)

Medications particularly glucocorticoids further increase the patient's susceptibility to infections,⁸ and also contribute to potentially irreversible damage related to treatment like osteoporosis and cataracts. The SLE damage index (SDI) includes complications attributable both to the disease and/or the medications. In the interim analyses of an ongoing prospective cohort, the development of cataract (included in the ocular category) shown in Figure 4 significantly correlated with cumulative steroid dose ($P<0.01$).⁵

Systemic lupus erythematosus (SLE) survival has improved in the recent decades, due to increasing disease awareness, early diagnosis and treatment, availability of

Table II. Reasons for hospitalization among Filipino SLE patients (N=596*)

	n (%)
Lupus flare (renal 53%)	357 (75)
Lupus flare with infection	68 (14)
Kidney biopsy	28 (6)
Renal failure requiring dialysis	26 (5)
Infection, systemic lupus erythematosus inactive	40 (34)
Others	77 (66)

*Number of hospitalizations in 430 patients over five years

Table III. Annual income of Filipino SLE patients (N=300)

Monthly personal income (Php)	N (%)
None	172 (58)
≤ 8,000	37 (12)
8,000-15,000	44 (14)
15,001-30,000	29 (10)
30,001-50,000	9 (3)
50,001-100,000	8 (2.7)
More than 100,000	1 (0.3)
Monthly household income (Php)	
≤ 8,000	62 (21)
8,001-15,000	80 (27)
15,001-30,000	77 (26)
30,001-50,000	49 (16)
50,001-100,000	18 (6)
More than 100,000	14 (5)

Php = Philippine peso

newer immunosuppressive medications with fewer toxicities, and aggressive treatment of related complications. SLE patients from the UST lupus database have a three-fold increase in mortality compared to the general population, with standardized mortality ratio (SMR) of three. Active SLE particularly nephritis and severe infections like sepsis were the main causes of death, especially within the first five years from diagnosis, consistent with worldwide literature.(Figure 5) Thus, timely diagnosis with more aggressive therapy and disease control early in the course of illness, should lead to better outcomes among SLE patients.

SLE has a negative impact on health-care costs, posing considerable socio-economic burden on society. In a survey conducted among SLE patients, 58% of patients had no personal income (Table III). On the other hand, those with some form of income spent 82% of their annual income

Table IV. Annual average healthcare costs of SLE patients in Php (N=300)

Costs	n	Mean	SD	Median	Minimum	Maximum
Total medical cost	300	115,534	134,511	68,400	8,220	735,600
Dialysis	16	480,000	0.0	480,000	480,000	480,000
Laboratory	300	7,040	9,286	3,000	600	70,000
ER/OPD consultation	300	2,100	5,597	700	200	67,200
Medications	300	76,425	66,013	43,740	4,320	304,800
Non-medical cost	300	17,507	19,587	12,000	2,400	184,800
Food	300	7,087	3,995	6,600	1,200	38,400
Travel	300	10,419	18,520	4,020	0	180,000
Total costs	300	133,041	139,985	90,950	17,440	859,050

Php-Philippine peso; ER-Emergency room; OPD-Out-patient department.

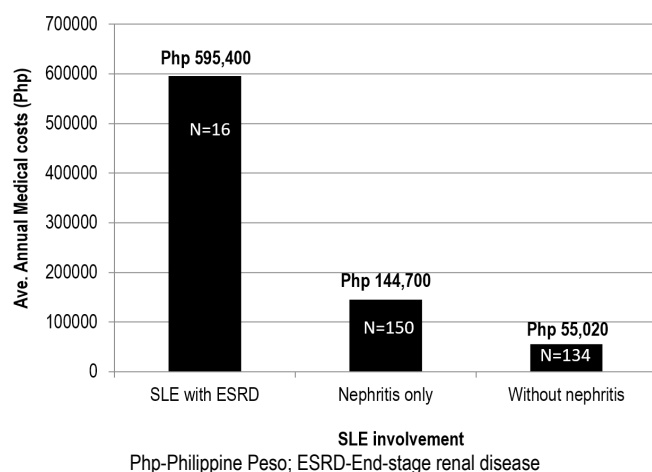


Figure 6. Annual direct medical costs of Filipino SLE patients by renal involvement (N=300)

on medical-related expenses (Table IV). More than half of patients (53.4%) reported spending approximately 25% of the household budget on medications alone, with patients recording that they “sometimes” (13.3%) or “always” (49.9%) miss their medications due to financial constraints. Nephritis with ESRD on dialytic treatment was the most important cost predictor, increasing medical costs up to seven-fold, with an average annual cost of Php 595,400 for patients on chronic hemodialysis or those who underwent renal transplantation (Figure 6). Furthermore, as patients live longer, attention to damage resulting from the disease, therapies and co-morbidities such as cardiovascular disease and osteoporosis has also increased.⁹

Recommendations for policy development in the Philippine National Health Care System

I. Philippine Health Agenda Medisina and Maximum Drug Retail Price (MDRP)

The Philippine Health Agenda (PHA) of the Department of Health aims to provide financial protection to poor and marginalized Filipinos from high health care costs, to ensure better health outcomes with no disparity, and to empower Filipinos in all their interaction with the health system. This includes guarantees to health care in all life stages (pre-natal to geriatric care), as well as to burden of communicable diseases, non-communicable diseases, and diseases of rapid urbanizations.¹⁰

This position paper strongly recommends that SLE be given priority in the national health agenda. The nature of SLE as a disease largely affecting a young population, with its unmet need for effective and safer therapies significantly increase the susceptibility of this patient population to key PHA conditions like tuberculosis (TB).⁹ To illustrate, analyses of patients from the UST lupus database who have developed

TB infection showed more than 50% with extra-pulmonary TB, which is inherently more challenging to diagnose and treat than pulmonary TB. This is compounded by the significant TB risk posed by corticosteroids which is standard therapy in SLE.^{11,12} Moreover, non-communicable diseases enumerated in the PHA (cancer, diabetes, heart diseases) are also common co-morbidities of SLE due to the chronic inflammation and need for maintenance medications.⁵

II. Persons with disability (PWD) benefits

Based on the United Nations (UN) Convention on the Rights of Persons with Disability, “Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.”¹³ In the 2016 Institute for Health Metrics and Evaluation (IHME) Health Data on the Philippines, joint pains, organ diseases and musculoskeletal disorders are among the top 10 causes of disability.¹⁴ The involvement of multiple organs and chronic evolution of SLE further acts as a long-term stressor, increasing the probability of developing anxiety or depressive symptoms. Patients with SLE, therefore, deserve to be classified as a “person with disability” with all corresponding benefits thereof, in order to help alleviate the burden of illness on the patient and caregivers.

III. Patient engagement in the Philippine National Formulary System

The Philippine National Formulary should recognize that decisions about the inclusion of drugs on formularies must be made with a proper balance of cost, efficacy, quality, and ease of use to optimize individual outcomes in the context of resource conservation. The endpoint of all discussions should be for the good of the Filipino patients, while ensuring that effectiveness and safety are not compromised. Formularies should be developed using a collaborative process involving physicians, pharmacists, patients, and other individuals possessing information concerning the science and economics of pharmaceutical products. As the direct consumers of the medicines, SLE patients like other patients must be actively involved in what constitutes as essential to their health care. Drug selection should be based on clinical outcomes, clinical comparability, safety, patient ease of use. Importantly, because of the economic state of most Filipinos particularly and including SLE patients, compounded by their chronic relapsing, remitting disease, drug unit cost should be a consideration.¹⁵

Summary

Systemic lupus erythematosus (SLE) is a chronic condition predominantly affecting a young population with potential

to be productive members of society. The nature of the disease itself however, as well as medications, significantly contribute to morbidity and mortality, with subsequent negative impact on quality of life and posing a heavy illness burden on the patient, family, and society. Because of the enigma of the disease and lack of clinicians specialized in their healthcare, SLE patients are currently under-served. Although more studies are necessary on Filipino SLE patients, the information derived from the UST lupus database to date hopes to have raised awareness and increased recognition of SLE as an important disease among Filipinos, deserving key priority in the healthcare agenda of public and private policymakers.

Disclosure

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Conflict of interest

The authors declare no conflict of interest.

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