Expert Opinion Elicitation for Assisting Deep Learning based Lyme Disease Classifier with Patient Data

Sk Imran Hossain[a,b], Jocelyn de Goër de Herve[b,c], David Abrial[b,c], Richard Emillion[d], Isabelle Lebert[b,c], Yann Frendo[a,b], Delphine Martineau[e], Olivier Lesens[f,g], Engelbert Mephu Nguifo[a,*]

[a]Université Clermont Auvergne, CNRS, ENSMSE, LIMOS, F-63000 Clermont-Ferrand, France
[b]Université Clermont Auvergne, INRAE, VetAgro Sup, UMR EPIA, 63122 Saint-Genès-Champanelle, France
[c]Université de Lyon, INRAE, VetAgro Sup, UMR EPIA, F-69280 Marcy l'Etoile, France
[d]MAMPO, Université d'Orléans, 45067 Orléans, France
[e]Infectious and Tropical Diseases Department, CHU Clermont-Ferrand, Clermont-Ferrand, France
[f]Infectious and Tropical Diseases Department, CRIOA, CHU Clermont-Ferrand, Clermont-Ferrand, France
[g]UMR CNRS 6023, Laboratoire Microorganismes: Génome Environnement (LMGE), Université Clermont Auvergne, Clermont-Ferrand, France
*Corresponding author
 phone: +33473407629, fax: +33473407639, email: engelbert.mephu_nguifo@uca.fr

Supplementary Data

Appendix A: Expert Selection for Erythema Migrans Probability Elicitation

Table A1: Experts recruited for erythema migrans probability elicitation.

Center	Number of Participating Experts
CRMVT du Grand Ouest Hôpital Pontchaillou Centre Urgences-Réanimations 2 rue Henri Le Guilloux 35033 Rennes Cedex 09	2
CRMVT Ile-de-France et Hauts-de-France Hôpital de Villeneuve-Saint-Georges Secrétariat du centre Lyme 40 allée de la Source 94195 Villeneuve-Saint-Georges Cedex	2
CRMVT de Strasbourg Nouvel Hôpital Civil - Hôpitaux Universitaires de Strasbourg (HUS) 1 place de l'Hôpital BP461 67091 STRASBOURG Cedex	1
CRMVT de Nancy Centre Hospitalier Régional et Universitaire (CHRU) de Nancy Rue du Morvan 54500 Vandœuvre-lès-Nancy	1
CRMVT de Clermont-Ferrand Service des Maladies Infectieuses et Tropicales CHU Gabriel Montpied 58, Rue Montalembert 63003 Clermont-Ferrand Cedex 1	8
CRMVT de Saint-Etienne Service des Maladies Infectieuses et Tropicales Hôpital Nord Avenue Albert Raimond 42270 Saint-Priest-en-Jarez	1

Appendix B: Questionnaire and doctors' weight attribution for erythema migrans

Table B1: Questionnaire and doctors' weight attribution for erythema migrans. The assigned weight values are in the range -1 to +3 (a higher value represents a higher contribution of the answer towards the possibility of the erythema migrans). d_1 to d_{15} represents the doctors.

Question	Answer	Weight Assigned by Doctors (Doctors' Evaluation)														
		d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	d_9	d_{10}	d_{11}	d_{12}	d_{13}	d_{14}	d_{15}
Other symptoms observed alongside the skin lesion	No	0	0	3	0	0	1	2	1	2	1	2	1	1	2	3
	Fever	-1	0	-1	1	1	1	1	1	1	1	1	1	1	1	0
	Fatigue	0	1	1	2	0	0	1	1	1	1	1	0	1	0	0
	Faintness	0	0	1	0	0	0	0	0	1	0	1	-1	1	0	0
	Joint pain	1	1	-1	2	2	1	1	1	1	1	1	1	1	0	0
	Headache	0	0	-1	0	2	0	1	1	0	2	1	1	1	0	0
	Itching	-1	-1	-1	-1	1	-1	0	0	0	1	-0.5	-1	-1	1	0
What was the maximum size of the spot	Less than 1 cm	-1	-1	0	-1	-1	-1	-1	0	0	-1	-1	-1	-1	1	-1
	from 1 to 5 cm	1	1	1	0	1	0	1	1	2	1	1	1	1	2	1
	more than 5 cm	3	2	2	2	3	2	3	2	1	3	2	2	3	3	3
	I do not know	0	0	0	0	0	0	-1	1	0	0	0	0	0	0	0
Is the size of the spot increasing or has it gradually increased	Yes	3	1	3	3	3	3	3	3	2	3	3	3	3	3	3
	No	0	-1	-1	-1	-1	-1	-1	0	-1	0	-1	-1	-1	1	-1
	I do not know	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Have you seen a tick bite on this red spot in the past 30 days	Yes	3	2	3	2	3	1	3	3	2	3	2	3	1	3	3
	No	0	0	0	0	0	1	0	1	0	0	-0.5	-1	0	1	0
Frequency of tick bites in the last 30 days before the appearance of the red spot	Never	-1	-1	0	0	-1	0	0	0	0	0	-1	-1	0	-1	0
	1 time	0	0	2	1	1	1	1	1	2	1	1	1	1	2	1
	2 to 5 times	1	1	3	1	1	1	1	2	2	1	2	1	1	3	1
	More than 5 times	2	2	1	2	2	1	1	2	2	2	3	1	1	3	2
Outdoor activities in the last 30 days before the onset of the red spot	Yes	1	1	2	2	1	1	2	2	2	2	2	2	1	3	2
	No	-1	-1	-1	-1	-1	0	-1	1	-1	-1	-1	-1	0	-1	0