documenting GCA or biopsy results were included in the PPV calculations. Algorithm 1, which identified the greatest number of patients (n=896), yielded the lowest PPV of 60.7%. Algorithms 4 and 5, which required disease-specific workups (temporal artery biopsy or chest imaging), mildly improved the PPV to 76.2% and 68.2%, respectively. The PPV was highest in algorithm 3 (84.8%), which required 2 or more diagnoses of GCA by a rheumatologist in addition to high dose steroid dispensing.

Table. PPV of Claims-based Algorithms

Algorithm #	No. of patients			
	Records Identified	Records Reviewed	Adequate Records	PPV* (95% CI)
1	896	446†	206 (46.2%)	60.7% (53.7-67.4)
2	471	471	270 (57.3%)	78.6% (73.2-83.3)
3	220	220	125 (57.4%)	84.8% (77.3-90.6)
4	296	296	172 (58.1%)	76.2% (69.1-82.3)
5	47	47	26 (55.3%)	68.2% (48.2-85.7)

* True positive cases included both definitive and probable GCA patients

†446 records were randomly selected for chart review.

Conclusion: A claims-based algorithm including two or more diagnosis codes for GCA by a rheumatologist separated by 7-30 days and high dose steroid dispensing (prednisone equivalent ≥ 40 mg/day for ≥ 14 days) can be a useful tool for identifying patients with GCA, allowing for future large real-world data studies.

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AB1247 ELEVATED SERUM COMPLEMENT (C3/C4) LEVEL AS AN INFLAMMATORY MARKER FOR INFECTION IN PATIENTS WITH FEVER: A RETROSPECTIVE STUDY

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Background: The functions of the complement system are to protect the host against infection, clearance of immune complexes, and regulate adaptive immunity after activation by C-reactive protein (CRP) or foreign cells.¹ C3 and C4 may increase up to 50 percent of baseline values as part of the acute-phase response, which is an expected host response for infection and injury.²

Objectives: We aimed to examine the correlation between elevated C3/C4 levels and the underlying causes (infectious vs. non-infectious) of fever (subjective and/or objective) in adults admitted to Community Regional Medical Center (CRMC).

Methods: This is a retrospective study of C3/C4 level that was ordered in adult patients who were admitted to CRMC in April 1st, 2018 to September 30th, 2018 with fever. This was also analyzed in comparison to elevated lactic acid, erythrocyte sedimentation rate (ESR), and CRP level.

Results: Complement levels were ordered in 210 patients admitted to CRMC medicine or intensive care units. Among these patients, 28.09% (59/210) were diagnosed with various infectious diseases confirmed by gold standard methods (cultures, serology tests, computerized tomography, or magnetic resonance imaging), regardless of fever status during admission.

About 26.6% (56/210) had subjective or objective (temperature greater than 100.4 F or above), and 52 of them had complement levels (C3/C4) ordered with resulted in either normal or elevated. Within these 52 patients, lactic acid, ESR, and CRP were ordered in 33, 28, 25 of them respectively.

Table 1. Elevated C3/C4 level vs. normal C3/C4 level in detecting infection in fever patients when tested against gold standards.

	Patients with infectious disease diagnosis	Patients without infectious disease diagnosis	
Elevated C3 or C4 or both (screen test +)	13	7	Positive predictive value (PPV) =13/20=65%
Both normal C3 and C4 (screen test -)	8	24	Negative predictive value (NPV) =15/32=48.9%
Sensitivity=13/21=61.9%		Specificity=24/31=77.4%	

Table 2. Sensitivity, specificity, PPV, NPV, likelihood ratio positive (LR+), and likelihood ratio negative (LR-) among C3/C4, lactic acid, ESR, CRP/CRPH in detecting infection in patient with fever

	C3/C4 (N=52)	Lactic Acid (N=33)	ESR (N=28)	CRP/CRPH (N=25)
Sensitivity	61.9%	50%	90%	100%
Specificity	77.4%	91.3%	11.1%	11.8%
PPV	65%	71.4%	36%	34.8%
NPV	48.9%	80.8%	66.6%	100%
LR+	2.7	5.7	1.0	1.1
LR -	0.49	0.55	0.9	0

Conclusion: Complement levels can be used as a rapid screening test to guide infection consideration as it correctly identified 61.9 % of febrile patients with infection, and 77.4% who didn't have an infection. A positive screening test in itself still requires further investigation in the causes of fever to confirm the diagnosis since the PPV is 65%. With the NPV of 48.9%, a negative screening test is still not reassuring that the febrile patient doesn't have an infection. Our study demonstrated the potential utilization of the elevated complement level as an inflammatory marker for infectious etiology of fever, as it has better LR+ when compares to ESR and CRP with similar turnaround time.

This study helps educate providers to acknowledge the fact that complement level does not have to be limited to be used on autoimmune related disorders only. Further large pool studies will be necessary to further investigate the role of complement levels as part of the screening test in a patient with fever.

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AB1248 MOLECULAR MARKERS OF PAIN AND OTHER SYMPTOMS IN KNEE OSTEOARTHRITIS

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Background: Osteoarthritis (OA) is one of the leading causes for disability in adults. The diagnosis of OA is generally based on patient reported pain, other symptoms and radiographic changes which occur in late stages. There have been extensive research over the last 30 years to identify and validate molecular markers for early diagnosis of OA and a large range of potential biomarkers has been identified[1, 2]. However, most of these biomarkers are markers of structural and metabolic changes, and have poor correlation with pain and stiffness in knee OA. The publicly available data from the National Institute of Health Osteoarthritis Initiative (OAI) provides an opportunity to search for clinically useful biomarkers associated with the main symptoms in OA.

Objectives: To identify molecular biomarkers which are associated with the main symptoms of knee OA.

Methods: 600 participants from 4791 men and women aged 45 to 79 who were Kellgren & Lawrence grade 1 or more were identified with biochemical markers data, radiographic and clinical features of OA. Nineteen biochemical markers measured in serum and/or urine were analysed for their association with primary clinical features of OA: Knee injury and Osteoarthritis Outcome Score (KOOS) pain and symptoms, and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) pain and stiffness score. Patient level analysis