

How can gastro-intestinal tuberculosis diagnosis be improved? A prospective cohort study

Supplementary Material

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Supplementary table 1: Diagnostic work-up of patients with suspected gastrointestinal tuberculosis

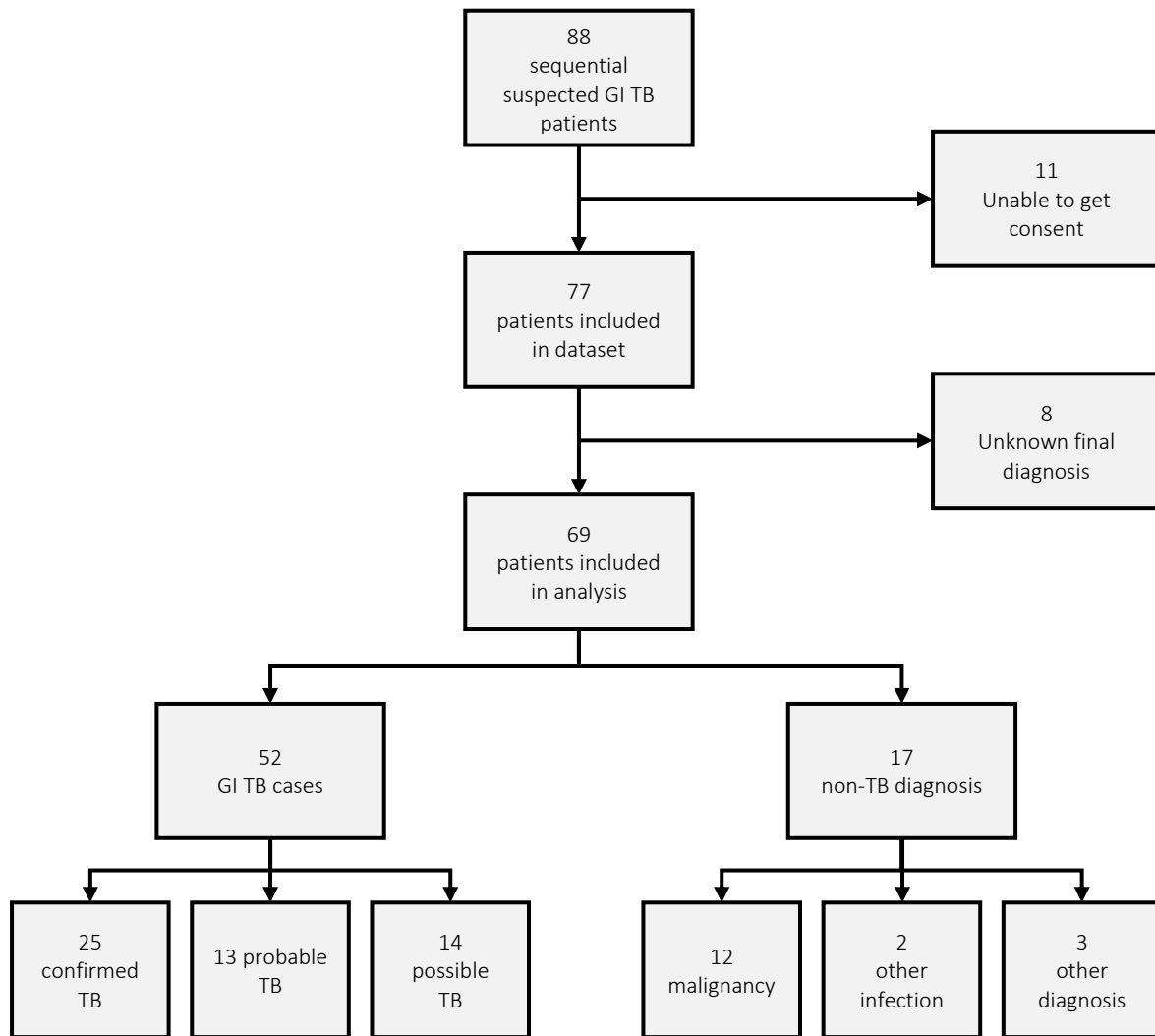
Blood tests	<ul style="list-style-type: none">• Full blood count• Serum electrolytes• Liver function tests• Blood culture• HIV rapid test or serology
Imaging	<ul style="list-style-type: none">• Chest x-ray• Abdominal x-ray, ultrasound, CT, and/or MRI as indicated
Microbiological testing*	<ul style="list-style-type: none">• Mycobacterial microscopy• Mycobacterial culture and susceptibility testing• <i>M. tuberculosis</i> Polymerase Chain Reaction (PCR)• GeneXpert MTB/RIF®
Histopathology	<ul style="list-style-type: none">• Standard processing for detection of granulomata, caseous necrosis etc.• Auramine staining for presence of Acid-Fast Bacilli
Other	<ul style="list-style-type: none">• Ascitic, pleural and or pericardial fluid biochemical analysis and cell count• Tuberculin skin test

*Diagnostic samples may include sputum, ascitic fluid, biopsies, lymph node aspirates, etc.

Supplementary table 2: Gastrointestinal tuberculosis case definitions

Confirmed	Probable	Possible	Not tuberculosis
Signs, symptoms and or imaging suggesting gastrointestinal TB	Signs, symptoms and or imaging suggesting gastrointestinal TB	Signs, symptoms and or imaging suggesting gastrointestinal TB	Signs, symptoms and or imaging suggesting gastrointestinal TB
and	and	and	but
<i>M. tuberculosis</i> culture positive on gastrointestinal specimen	Acid Fast Bacilli detected on microscopy on gastrointestinal specimen	Supportive findings e.g. mononuclear predominance in ascitic fluid, ileal inflammation on endoscopy	Alternative diagnosis confirmed or strongly suspected (e.g. alternative pathogen identified, or illness resolves quickly without TB treatment)
or	or	and	
<i>M. tuberculosis</i> culture positive sputum, and clinical findings or imaging indicative of gastrointestinal TB, and no other etiology identified for gastrointestinal findings	Weaker histopathological evidence (e.g. granulomata only)	Improvement in response to TB treatment	
or	and		
Strong histopathological evidence of TB (e.g. caseous necrosis plus AFBs)	Improvement in response to TB treatment		
or			
<i>M. tuberculosis</i> PCR/GeneXpert MTB ® positive			

Supplementary figure 1: Recruitment and classification of study participants



Supplementary table 3: Mean blood test results during initial diagnostic work-up

	Confirmed & probable TB cases	Non-TB cases	<i>p</i> value for difference in mean
Hemoglobin (g/dL)	10.80	10.35	0.64
White blood cells (x10 ⁹ /L)	7.95	9.58	0.34
Platelets (x10 ⁹ /L)	346.81	288.99	0.34
Lymphocytes (%)	18.89	15.73	0.39
Creatinine (umol/L)	109.24	152.79	0.56
Glucose (mmol/L)	6.54	7.33	0.30
Albumin (g/L)	26.17	21.54	0.07
Bilirubin (mmol/L)	13.35	24.04	0.18
ALT (U/L)	44.68	29.69	0.48
AST (U/L)	38.97	31.54	0.54
ALP (U/L)	172.96	201.48	0.73
LDH (uL)	266.71	208.75	0.23
Prothrombin time (seconds)	14.24	14.29	0.92

Supplementary table 4: Gastrointestinal biopsy and ascitic fluid GeneXpert® MTB results by type and site

Specimen site/type	Negative		Positive		Total	
	N	%	N	%	N	%
Large bowel	11	65	6	35	17	24
Small bowel	9	56	7	44	16	22
Ascitic fluid	15	100	0	0	15	21
Peritoneum	3	60	2	40	5	7
Liver	2	50	2	50	4	6
Lymph node	3	75	1	25	4	6
Omentum	1	50	1	50	2	3
Other	6	67	3	33	9	13
Total	50		22		72	