Objective: Gastric adenocarcinoma (GAC) is the 17th most common cancer in the UK and has a five-year survival rate of 22%. GastroPanel (Biohit Oyj; Helsinki, Finland) is an ELISA kit that measures four plasma biomarkers – pepsinogen I (PGI); pepsinogen II (PGII); gastrin-17 (G-17); and *Helicobacter pylori* IgG antibodies (Hp IgG) – for the detection of atrophic gastritis (AG). PGI and the PGI/PGII ratio correlate inversely with the severity of chronic AG and have been shown to accurately identify patients at risk of GAC. This clinical validation study assessed the diagnostic accuracy of GastroPanel in detecting AG among consecutive dyspeptic patients referred for gastroscopy at a single UK centre. **Design**: 268 patients [151 females (56.3%); median age = 57 (range 39-92 years)] underwent gastroscopy and biopsy histology according to the updated Sydney System (USS). Blood (plasma) samples for GastroPanel analysis were collected for the index testing. GastroPanel results were interpreted using the GastroSoft® app (Biohit Oyj, Helsinki, Finland). **Results**: Overall agreement (OA) between GastroPanel and the USS classification was 90% (95% CI = 86.7-93.8%), with a weighted kappa (K_W) of 0.828 (95% CI = 0.781-0.865). In Receiver Operating Characteristics (ROC) analysis, using moderate/severe atrophic gastritis of the corpus (AGC2+) as the endpoint, AUC = 0.840 (95% CI 0.630-1.000) and 0.960 (95% CI 0.907-1.000) for PGI and the PGI/PGII ratio, respectively. **Conclusions**: GastroPanel is a precise triage test capable of distinguishing patients with functional dyspepsia who can be safely followed up and treated conservatively from those at high risk of developing GAC, for whom image-enhanced gastroscopy is mandatory.