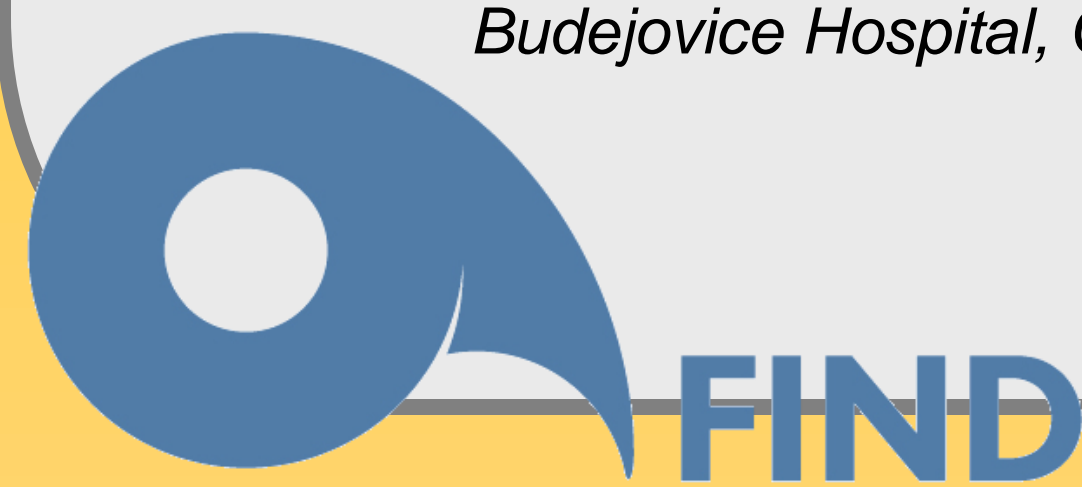


Comparison of galactomannan detected in serum/ bronchoalveolar lavage fluid and type of abnormality on pulmonary high-resolution computed tomography in patients with pulmonary invasive aspergillosis

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Background

Invasive aspergillosis (IA) represents a serious mould infection predominantly in patients (pts.) with acute myeloid leukemia (AML) after re-/induction therapy or pts. after allogeneic hematopoietic stem cell transplantation. The most frequent probable pulmonary IA (IPA) requires the presence of host, radiologic (pathologic finding on pulmonary high-resolution computed tomography, HRCT) and microbiological criterion (usually consecutive positivity of serum galactomannan, S-GM, or positivity of GM from bronchoalveolar lavage fluid, BAL GM) according to the EORTC/MSG definitions.

There have been lack of data in the literature concerning relationship between sensitivity of GM and type of abnormality on pulmonary HRCT in pts. with IPA to date.

Methods

We retrospectively analyzed the relationship between sensitivity of BAL GM and S-GM and type of abnormality on pulmonary HRCT in pts. with probable and proven IPA (according to EORTC/MSG recommendation published in 2008) entered in Fungal Infection Database (FIND) *aspergillus* between 2001 and 2012. FIND works on behalf of the Czech Leukemia Study Group for Life (CELL) and represents one of the largest international database in Central and Eastern Europe that covers probable and proven IA cases from 17 Czech, Slovak and Croatian hematological centers.

Abnormalities on pulmonary HRCT were divided into infiltrates and nodules according to the predominant imaging finding.

Results

Serum-galactomannan

Patient characteristics

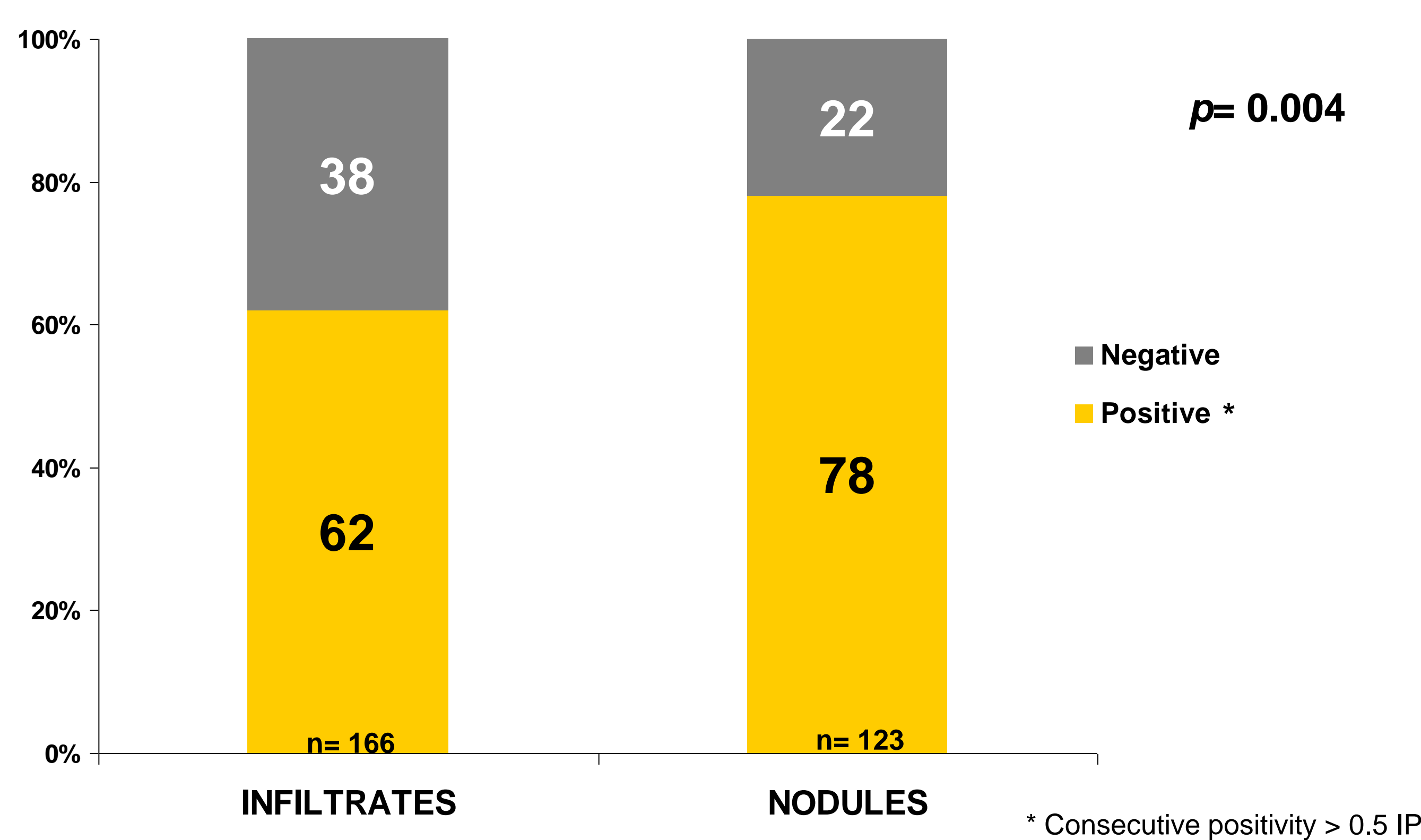
	n	%
Total number of cases	289	100
AML - most frequent underlying disease	130	45
Re-/induction of AL - most frequent anticancer th.	110	38
Neutropenia < 0.5x 10 ⁹ /l > 10 days before dg. of IPA	182	63
Mould-active antifungal therapy at the time of S-GM sample taking	130	45

Galactomannan from BAL fluid

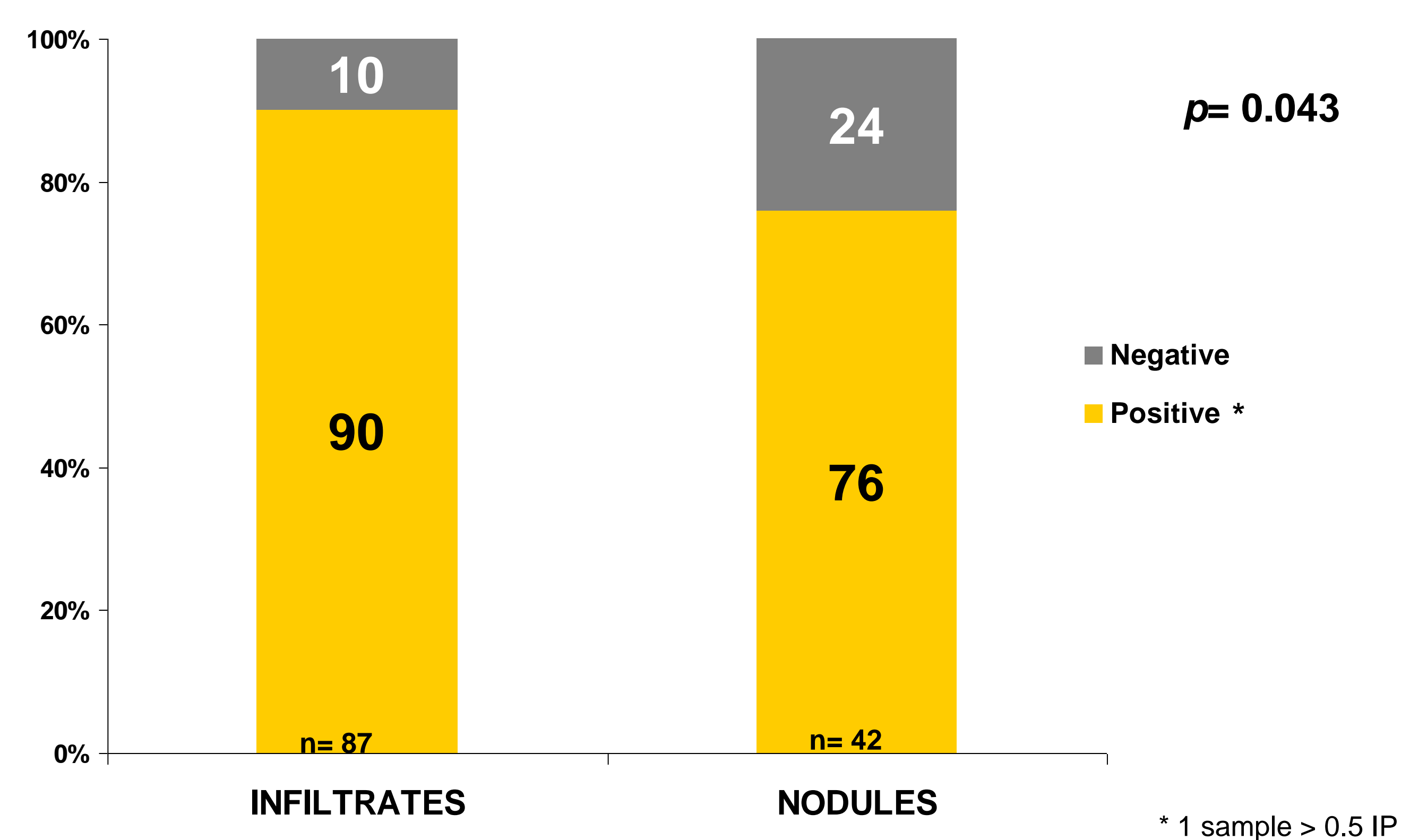
Patient characteristics

	n	%
Total number of cases	129	100
AML - most frequent underlying disease	56	43
Re-/induction of AL - most frequent anticancer th.	44	34
Neutropenia < 0.5x 10 ⁹ /l > 10 days before dg. of IPA	72	56
Mould-active antifungal therapy at the time of S-GM sample taking	86	67

Sensitivity of S-GM and type of HRCT imaging finding



Sensitivity of BAL GM and type of HRCT imaging finding



Conclusions

- Our study proved higher sensitivity of S-GM in IPA pts. with more specific findings - nodules - compare to nonspecific findings - infiltrates - on pulmonary HRCT
- One of the hypothesis might be that more advanced findings on HRCT correlate with higher invasivity of fungal disease and higher load of S-GM
- In contrast to S-GM our analysis proved significantly higher sensitivity of BAL GM in pts. with pulmonary infiltrates than nodules on HRCT
- Several other factors may influence the sensitivity of GM such as mould-active antifungal th. and/or neutropenia
- Sensitivity of GM detected in BAL fluid might be influenced by other conditions such as technical performance of BAL
- We didn't proved statistically significant relationship between maximal value of BAL GM and S-GM at the time of dg. of IPA and type of HRCT finding