

## Background and Aim

- Various methods for endoscopic transpapillary sampling have been developed. However, the accuracy rates of these methods for malignant bile duct lesions are inconsistent.
- **The aim of the present study was to determine the factors affecting the accuracy of endoscopic transpapillary sampling methods.**

## Methods

The results of 92 bile duct cancer patients who underwent transpapillary sampling by aspiration bile cytology, brushing cytology, and fluoroscopic forceps biopsy were reviewed. The final diagnosis of bile duct cancer was made on the basis of pathological evaluation of specimens obtained at surgery or the clinical course over at least 1 year in patients not operated. We carried out subgroup analyses on factors affecting the accuracy of each transpapillary sampling method.

## Results

**Table 1** Characteristics of the patient population, *n* = 92

Characteristic	
Mean age, years (range)	69 (52–91)
Sex (men:women), <i>n</i> (%)	36:20 (64.3:35.7)
<b>Etiology</b>	
Cholangiocarcinoma, <i>n</i> (%)	66 (71.7)
Pancreatic cancer, <i>n</i> (%)	14 (15.2)
GB cancer, <i>n</i> (%)	6 (6.5)
<b>Procedure</b>	
Biopsy, <i>n</i> (%)	92 (100)
Brush cytology, <i>n</i> (%)	25 (27.2)
Cytology, <i>n</i> (%)	49 (53.2)

- Transpapillary biopsy (71.2%) had a significantly higher level of sensitivity for cholangiocarcinoma than brush cytology (58.8%) or bile cytology (62.5%).
- Bile cytology (85.7%) showed higher diagnostic yield for pancreatic cancer with bile duct invasion compared to that of transpapillary biopsy (60%) or brush cytology (66.7%).
- In patients with negative biopsy results, bile cytology had higher diagnostic yield than brush cytology.

**Table 2** Comparison of the patients' characteristics according to pathologic finding

	Positive		<i>p</i> value
	YES	NO	
Age (years)	67± 13.2	73.9± 12.1	0.72
Sex			0.43
Men, <i>n</i> (%)	27 (67.5)	9 (56.2)	
Women, <i>n</i> (%)	13 (32.5)	7 (43.8)	
Biopsy, <i>n</i> (%)	53 (69.7)	23 (30.2)	
Brush cytology, <i>n</i> (%)	12 (60)	8 (40)	
Cytology, <i>n</i> (%)	26 (66.7)	13 (33.3)	
<b>Cholangiocarcinoma</b>			
Biopsy, <i>n</i> (%)	49 (71.2)	17 (28.8)	
Brush cytology, <i>n</i> (%)	10 (58.8)	7 (41.2)	
Cytology, <i>n</i> (%)	20 (62.5)	12 (37.5)	
<b>Pancreatic cancer c CBD mets</b>			
Biopsy, <i>n</i> (%)	6 (60)	4 (40)	
Brush cytology, <i>n</i> (%)	2 (66.7)	1 (33.3)	
Cytology, <i>n</i> (%)	6 (85.7)	1 (14.3)	

**Table 3** Comparison of the patients' characteristics according to pathologic finding in biopsy negative patients

	Positive	
	YES	NO
<b>Cholangiocarcinoma</b>		
Brush cytology, <i>n</i> (%)	1 (33.3)	2 (66.7)
Cytology, <i>n</i> (%)	4 (44.4)	5 (55.6)
<b>Pancreatic cancer c CBD mets</b>		
Brush cytology, <i>n</i> (%)	0 (0)	1 (100)
Cytology, <i>n</i> (%)	2 (33.3)	1 (66.7)

## Conclusion

- ✓ Transpapillary bile duct biopsy is a simple, safe, and effective technique for diagnosing biliary malignancy.
- ✓ It showed higher sensitivity for cholangiocarcinoma than for pancreatic cancer with bile duct invasion.
- ✓ When the biopsy result was negative, bile cytology was helpful in increasing the diagnostic yield.

