

# The comparison of different drip cholangiography

**Authors:** Na Wang, Shuhong Zhang, Baohua Luo, Qianqian Wang , Sicheng Zhao, Dongmei Bao, Xi Zhang

## Fundings

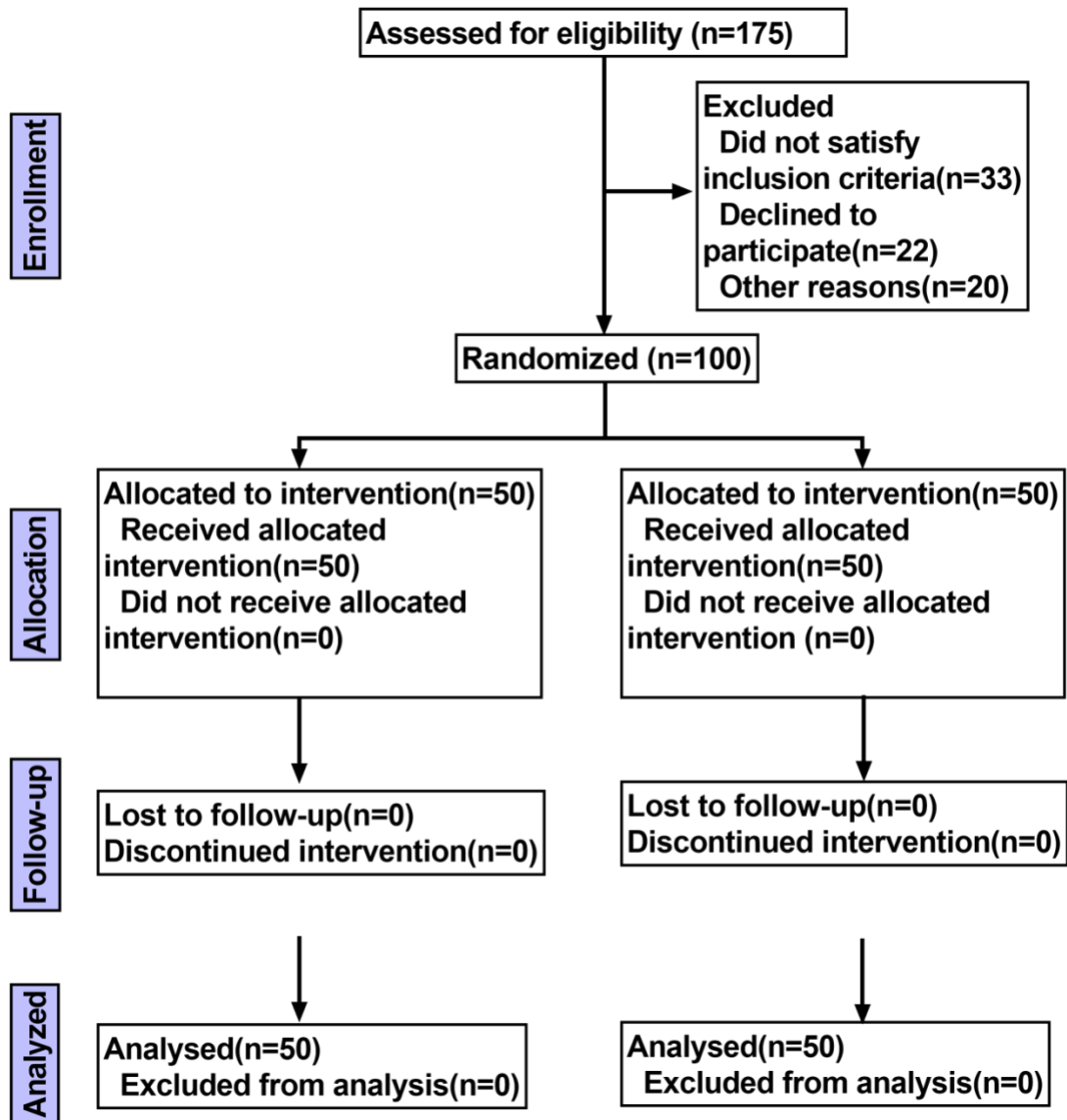
- 1.Ningxia Hui Autonomous Region Key R&D Program General Project Topics (no. 2018BEG03022ERCP)
- 2.Autonomous Region Health and Health System Research Projects (no. 2019-NW-007 )

**Purposes** The purpose of this study was to investigate the advantages and disadvantages of gravity drip and artificial push injection in cholangiography.

## Materials and instruments

Olympus gastroscope, **0.9% normal saline 50ml and 30% iodophor 50ml,**  
Brilliance nanoCT (64 slice),

## Methods



**Figure 1** A flow diagram showing the patient selection process.

(1) 100 patients who need cholangiography from June 2019 to June 2020 in Hepatobiliary Surgery, General Hospital of Ningxia Medical University were randomly divided into traditional manual injection group (N group, 50 cases) and gravity drip group (O group, 50 cases). N group was chosen the operation method of cholangiography is that the doctor holds a syringe in the operating room to inject, aspirates 50ml of prepared contrast agent with a 60ml syringe, and the doctor pushes

the contrast agent with his hand on the right side of the patient, and continuously observes the results of bile duct development through perspective but O group was infused the contrast medium into bile duct at a rate of 80 drops per minute. Clinicians and radiologists monitor the whole process of angiography in the control room and evaluate the cholangiography results.

(2) General situation assessment before operation: explain the purpose of examination to patients, and inquire in detail whether there is any history of iodine allergy, whether there is any history of nausea, vomiting, abdominal distention, abdominal pain and fever in recent 3 days. (2) Evaluation of bile duct: Understand the imaging data of bile duct imaging after ERCP. (3) Contrast agent preparation: select 0.9% normal saline 50ml and 30% iodophor 50ml to prepare contrast solution.

(3) Traditional injection method: Suck 50ml of prepared contrast agent with a 60ml syringe, and push the contrast agent by hand at the right side of the patient, and continuously observe the results of bile duct visualization through perspective.

(4) Gravity drip method: Preparation: Take the prepared contrast medium, connect the infusion set and hang it on the infusion stand 50cm away from the patient's body level, and connect the nipple of the infusion set with the Ruhr locking connector of nasobiliary duct. Positioning: Take the patient in a supine position with his head low and feet high (20-30°), and evaluate whether the biliary tract overlaps with the spine through fluoroscopy. If the patient overlaps, give the slope pad to the right for 15-20° to avoid the interference of the spine. Angiography: Open the regulator and infuse the contrast medium into bile duct at a rate of 80 drops per minute. Clinicians and

radiologists monitor the whole process of angiography in the control room and evaluate the cholangiography results. End: After angiography, the infusion set was pulled out and the nasobiliary duct was connected with the drainage bag.

(5) Statistical analysis was carried out by SPSS statistical software version 19.0. A complete descriptive analysis of all available variables is made.  $P < 0.01$  is considered to have statistical significance. For classified variables, data are expressed as numerical counts and percentages, and  $\chi^2$  test and variance analysis are adopted.

## Results

	N Group	O Group	p value
Sex	50	50	
Male	36(72.00%)	39(78.00%)	<b>0.644</b>
Femal	14(28.00%)	11(22.00%)	
Age, years	(38.26 ± 5.16)	(37.42 ± 4.33)	<b>0.225</b>
Obesity			
yes	10(20.00%)	8(16.00%)	<b>0.795</b>
no	40(80.00%)	42(84.00%)	
History of pancreatitis			
yes	12(24.00%)	13(26.00%)	<b>&gt;0.999</b>
no	38(76.00%)	37(74.00%)	
History of biliary duct stones			
yes	16(32.00%)	18(36.00%)	<b>0.833</b>
no	34(68.00%)	32(64.00%)	

**Table 1** The baseline demographic and clinical characteristics for each group, dates

were shown as n(%) or mean±SD

Groups	Abdominalgia	Chilly	Fever	Jaundice	Calculus
N	3/50	3/50	2/50	1/50	6/50
O	2/50	1/50	1/50	1/50	12/50
<i>P</i> value	0.0362				0.0217

**Table 2** Adverse reactions between two groups

Groups	Very satisfaction	Satisfaction	General Satisfaction	NO Satisfaction
N	22/50	12/50	9/50	7/50
O	32/50	15/50	2/50	1/50
<i>P</i> value	0.0372	0.0647	0.0263	0.0187

**Table 3** Angiographic satisfaction between two groups

## Time

June 2019 to June 2020 in Hepatobiliary Surgery, General Hospital of Ningxia

Medical University

Article information: <https://dx.doi.org/10.21037/apm-21-2661>