



Supplementary Materials:

Supplementary table S1. Common bile duct stone recurrence results by medication type

Recurrence results	Single-agent n=306	Dual-agent [#] n=441	P value
Recurrence	39 (12.7)	43 (9.8)	0.198
Recurrence within 1 year	14 (4.6)	25 (5.7)	0.509
Recurrence frequency 1/2/3+	22/12/5	28/10/5	0.702
Time to recurrence (months)	22.4±17.2	24.2±26.2	0.708
Duration of follow-up (months)	25.5±29.2	26.3±31.8	0.724

Data are mean ± standard deviation, number, or number (percentage)

[#] dual-agent = terpene plus UDCA (ursodeoxycholic acid) or terpene plus C&U (chenodeoxycholic acid [CDCA])

Supplementary table S2. Baseline characteristics with common bile duct stone recurrence

Factors	No recurrence n=778	Recurrence n=162	P value
Sex, male	387 (50.0)	83 (51.6)	0.720
Age (years)	63.2±15.1	70.7±11.1	< 0.001*
Age ≥ 70 years	303 (39.1)	98 (61.3)	< 0.001*
BMI (kg/m²)	24.1±3.7	24.0±3.0	0.682
BMI ≥ 25 kg/m²	280 (36.3)	48 (29.6)	0.107
Hypertension	318 (40.9)	82 (50.9)	0.019*
Diabetes	167 (21.5)	36 (22.4)	0.802
Dyslipidemia	73 (9.4)	15 (9.3)	0.975
Periampullary diverticulum	253 (32.7)	67 (41.4)	0.034*
Type I	27 (12.4)	13 (22.4)	0.009*
Type II	120 (55.0)	25 (43.1)	0.998
Type III	71 (32.6)	20 (34.5)	0.207
Bile duct diameter (mm)	12.6±5.6	14.9±6.4	< 0.001*
Bile duct diameter > 13 mm	313 (40.4)	92 (56.8)	< 0.001*
Bile duct angle	140.3±20.0	144.4±15.0	0.003*
Bile duct angle < 145°	406 (52.5)	73 (45.1)	0.087
Procedure			
EST	750 (96.4)	148 (91.4)	0.005*
EST + EPBD	281 (36.1)	103 (63.6)	< 0.001*
EST + EPLBD	112 (14.4)	42 (25.9)	< 0.001*
Mechanical lithotripsy	179 (23.1)	61 (37.7)	< 0.001*
Type of removed CBD stone			
Brown	445 (57.9)	107 (66.0)	0.037*
Black	195 (25.4)	33 (20.4)	0.205
Cholesterol	129 (16.8)	22 (13.6)	0.344

Medication group			
No medication	113 (14.5)	80 (49.4)	< 0.001*
Single-agent	267 (34.3)	39 (24.1)	0.011*
Dual-agent	398 (51.2)	43 (26.5)	< 0.001*
Medication duration (months)	8.8±14.1	5.2±6.3	< 0.001*
Medication > 7 months	256 (34.6)	32 (22.7)	0.006*

Data are means ± standard deviations, numbers, or numbers (percentages)
* Statistically significant
Bl, black pigment stone; BMI, body mass index; CBD, common bile duct; EPBD, endoscopic papillary balloon dilation; EPLBD, endoscopic papillary balloon dilation (≥12mm); EST, endoscopic sphincterotomy.

Medications	UDCA n=200	C&U n=75	Terpene n=31	UDCA + Terpene n=228	C&U + Terpene n=213
UDCA n=200	<i>P value</i>	0.677	0.243	0.434	0.019*
C&U n=75	0.677	<i>P value</i>	0.551	0.879	0.019*
Terpene n=31	0.243	0.551	<i>P value</i>	0.421	0.012*
UDCA + Terpene n=228	0.434	0.879	0.421	<i>P value</i>	0.002*
C&U + Terpene n=213	0.019*	0.019*	0.012*	0.002*	<i>P value</i>

Supplementary figure S1. Recurrence of the medication subgroups
* Statistically significant
UDCA, ursodeoxycholic acid; C&U, chenodeoxycholic acid plus ursodeoxycholic acid.

Medications	UDCA n=200	C&U n=75	Terpene n=31	UDCA + Terpene n=228	C&U + Terpene n=213
UDCA n=200	P value	0.739	< 0.001*	0.044*	0.003*
C&U n=75	0.739	P value	< 0.001*	0.321	0.030*
Terpene n=31	< 0.001*	< 0.001*	P value	< 0.001*	0.211
UDCA + Terpene n=228	0.044*	0.321	< 0.001*	P value	0.270
C&U + Terpene n=213	0.003*	0.030*	0.211	0.270	P value

Supplementary figure S2. Time to recurrence of the medication subgroups

* Statistically significant

UDCA, ursodeoxycholic acid; C&U, chenodeoxycholic acid plus ursodeoxycholic acid.

Medications	UDCA n=200	C&U n=75	Terpene n=31	UDCA + Terpene n=228	C&U + Terpene n=213
UDCA n=200	P value	0.043*	0.235	0.500	0.060*
C&U n=75	0.043*	P value	0.007*	0.183	< 0.001*
Terpene n=31	0.235	0.007*	P value	0.137	0.721
UDCA + Terpene n=228	0.500	0.183	0.137	P value	0.026*
C&U + Terpene n=213	0.060*	< 0.001*	0.721	0.026*	P value

Supplementary figure S3. Duration of medication use of the medication subgroups

* Statistically significant

UDCA, ursodeoxycholic acid; C&U, chenodeoxycholic acid plus ursodeoxycholic acid.