FIG. 1

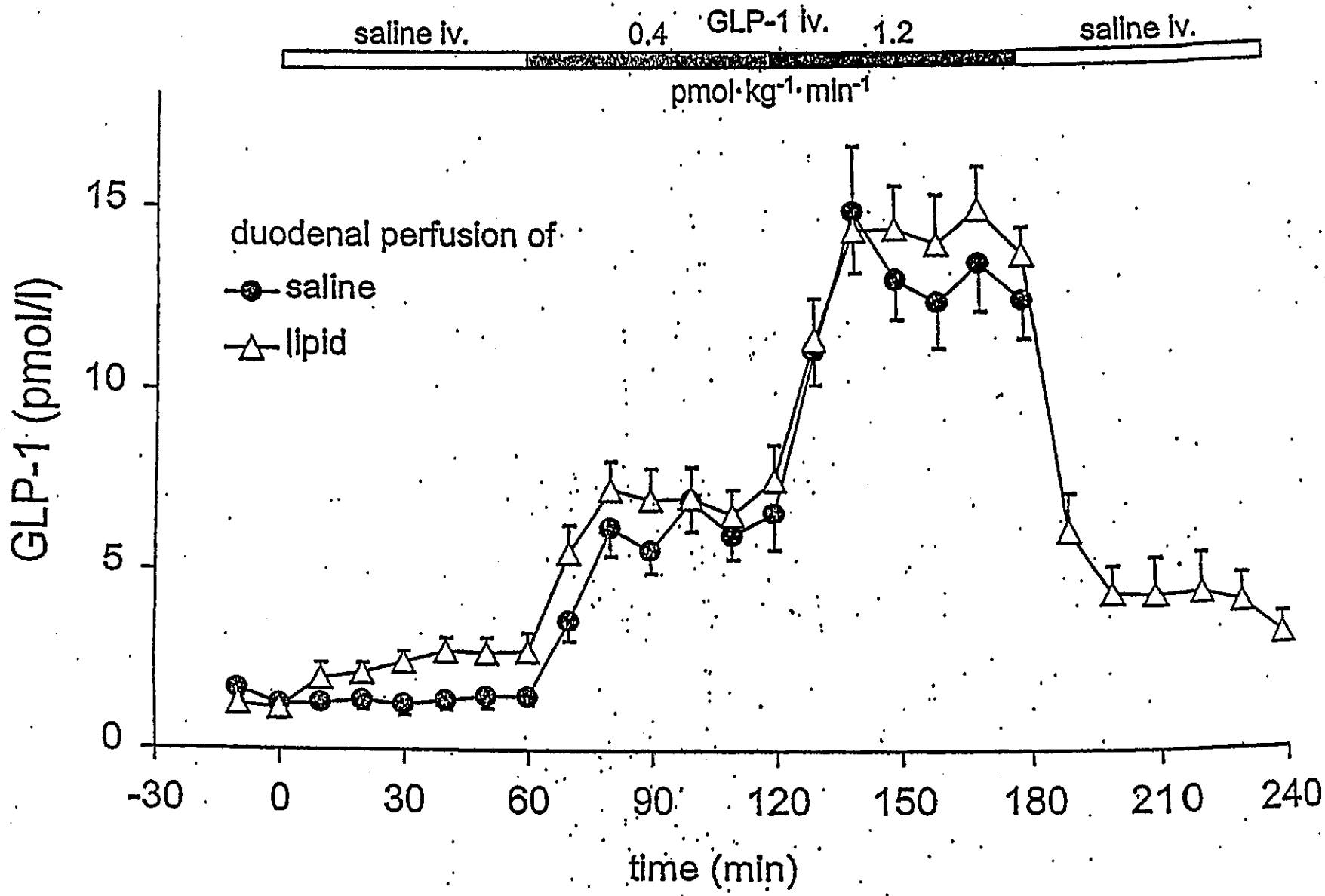

saline iv.
0.4
GLP-1 iv.
1.2
saline iv.
pmol·kg-1·min-1
duodenal perfusion of
saline
lipid
GLP-1 (pmol/l)
0
5
10
15
-30
0
30
60
90
120
150
180
210
240
time (min)

FIG. 2

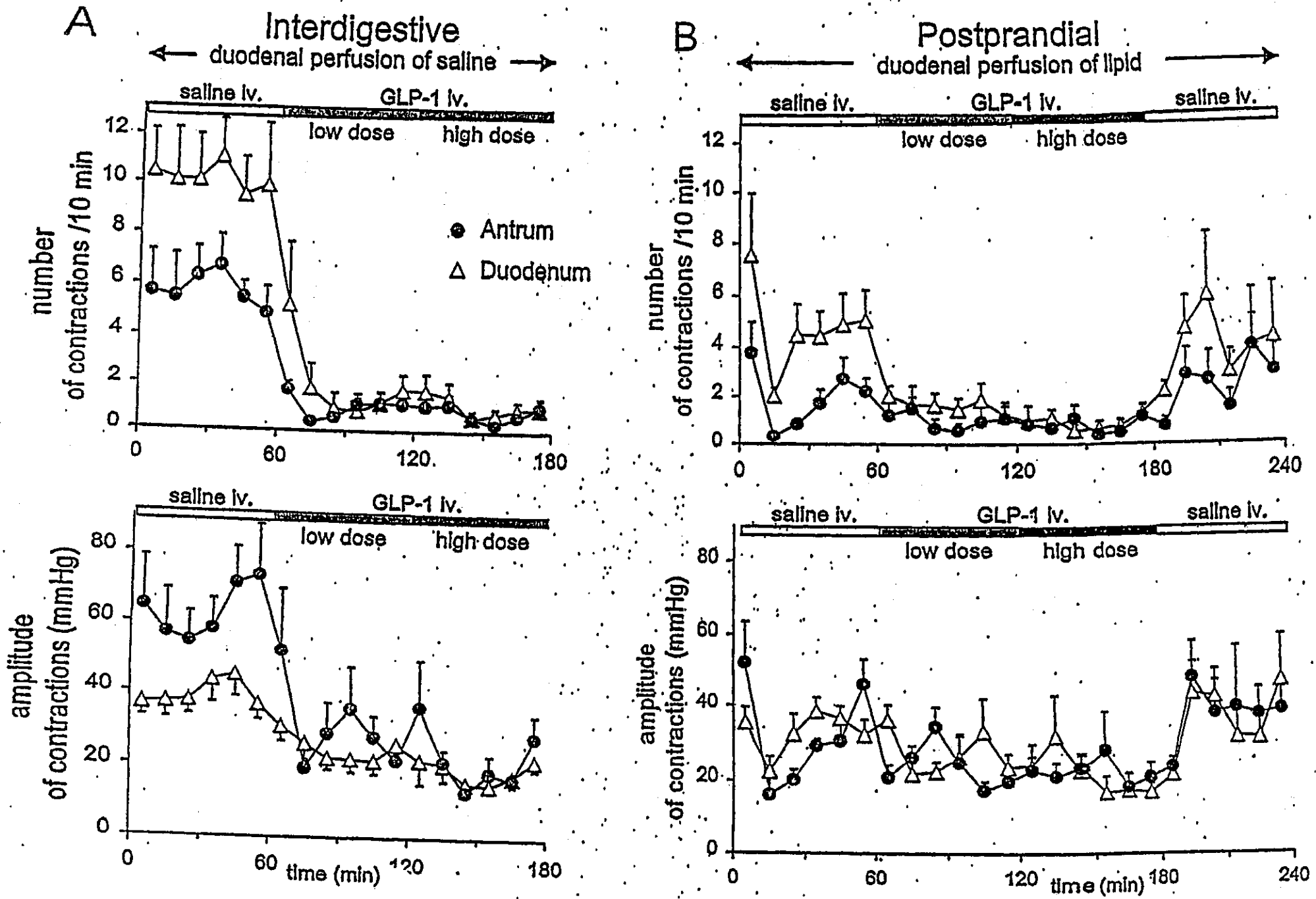
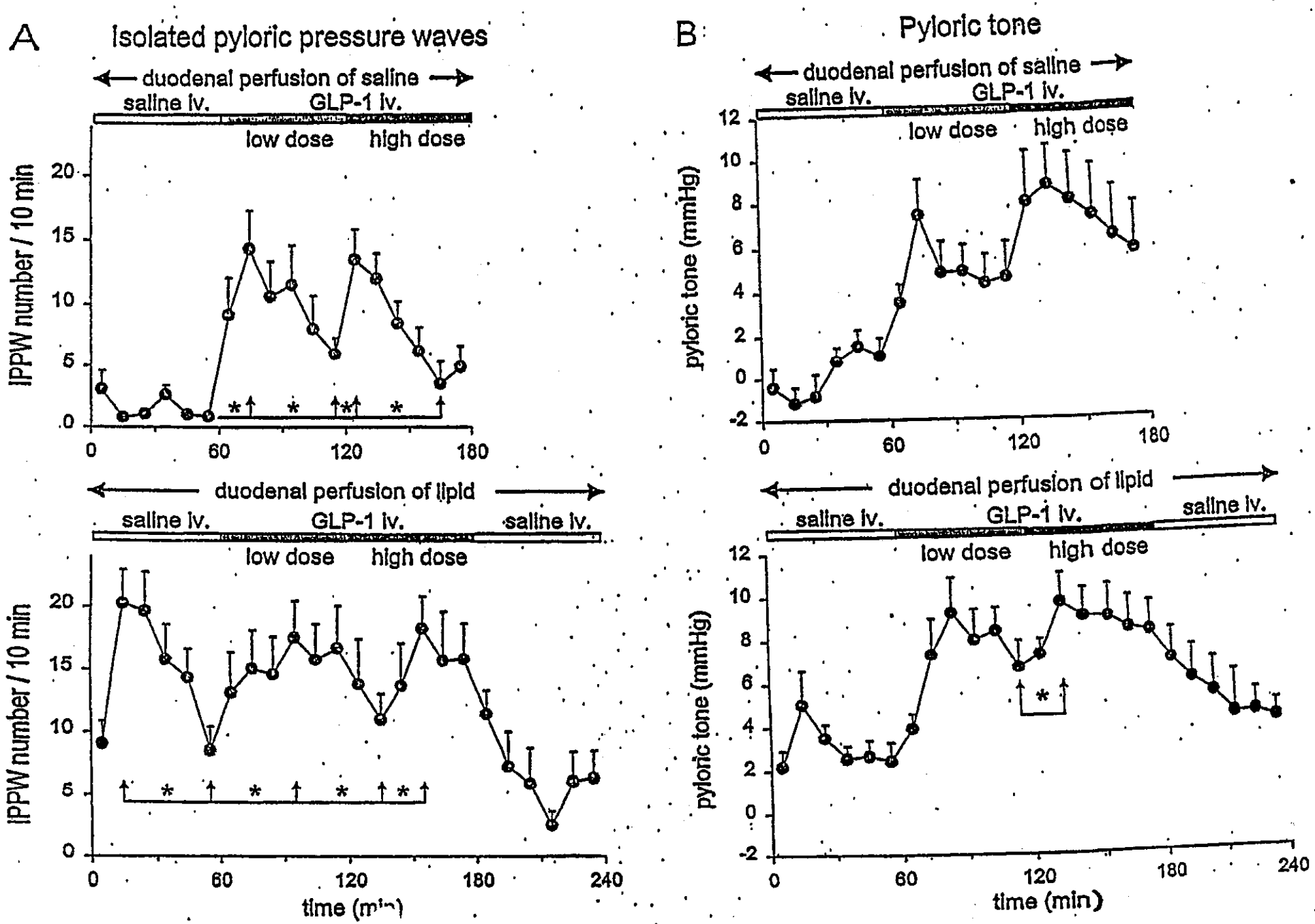

A
Interdigestive
duodenal perfusion of saline
saline iv.
GLP-1 iv.
low dose
high dose
number of contractions /10 min
Antrum
Duodenum
amplitude of contractions (mmHg)
time (min)
B
Postprandial
duodenal perfusion of lipid
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
number of contractions /10 min
amplitude of contractions (mmHg)
time (min)

FIG. 3


A
Isolated pyloric pressure waves
duodenal perfusion of saline
saline iv.
GLP-1 iv.
low dose
high dose
IPPW number / 10 min
duodenal perfusion of lipid
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
IPPW number / 10 min
time (min)
B
Pyloric tone
duodenal perfusion of saline
saline iv.
GLP-1 iv.
low dose
high dose
pyloric tone (mmHg)
duodenal perfusion of lipid
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
pyloric tone (mmHg)
time (min)

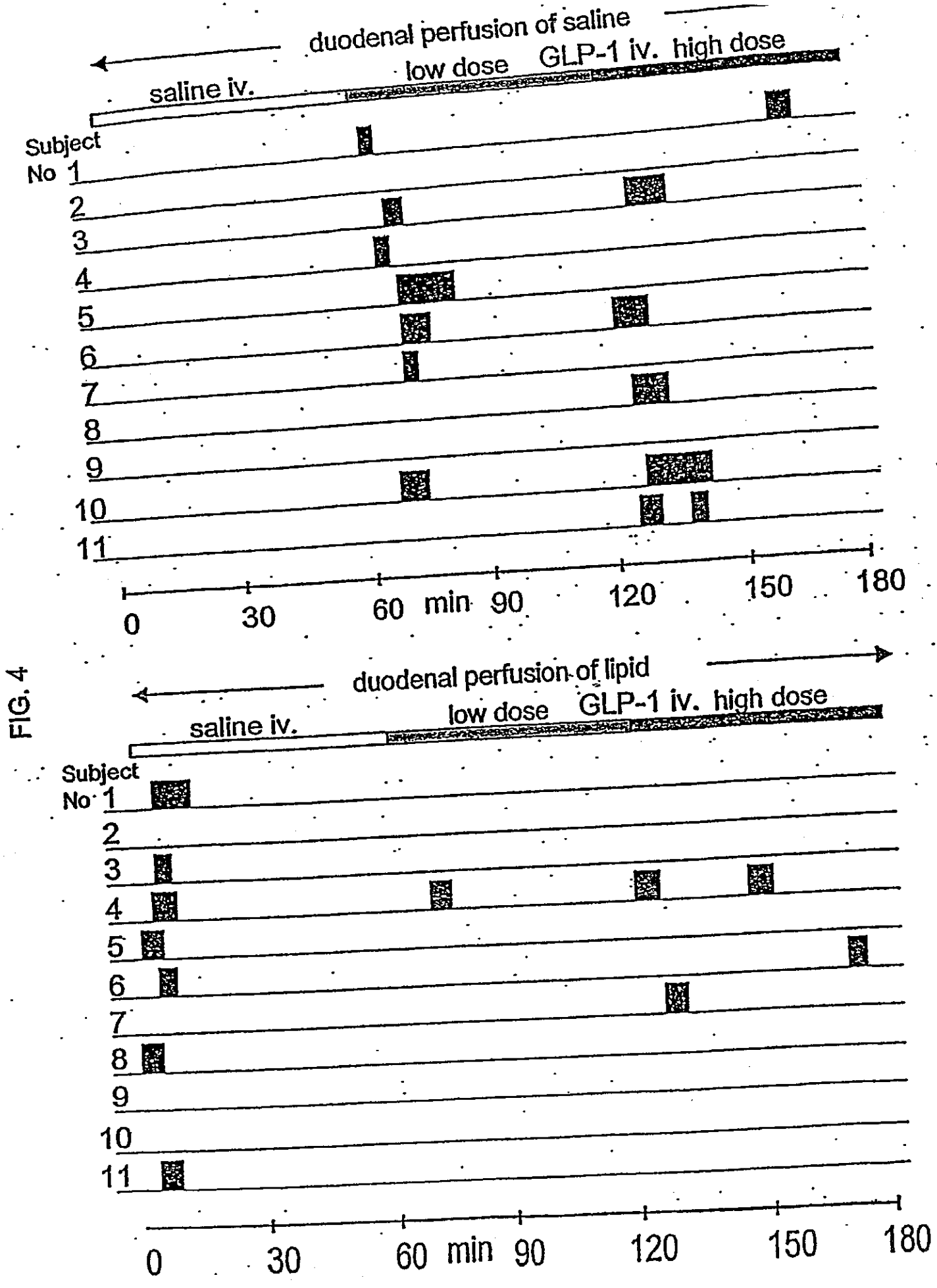

duodenal perfusion of saline
saline iv.
low dose GLP-1 iv. high dose
Subject No
1
2
3
4
5
6
7
8
9
10
11
0
30
60
min
90
120
150
180
duodenal perfusion of lipid
saline iv.
low dose GLP-1 iv. high dose
Subject No
1
2
3
4
5
6
7
8
9
10
11
0
30
60
min
90
120
150
180

FIG. 4

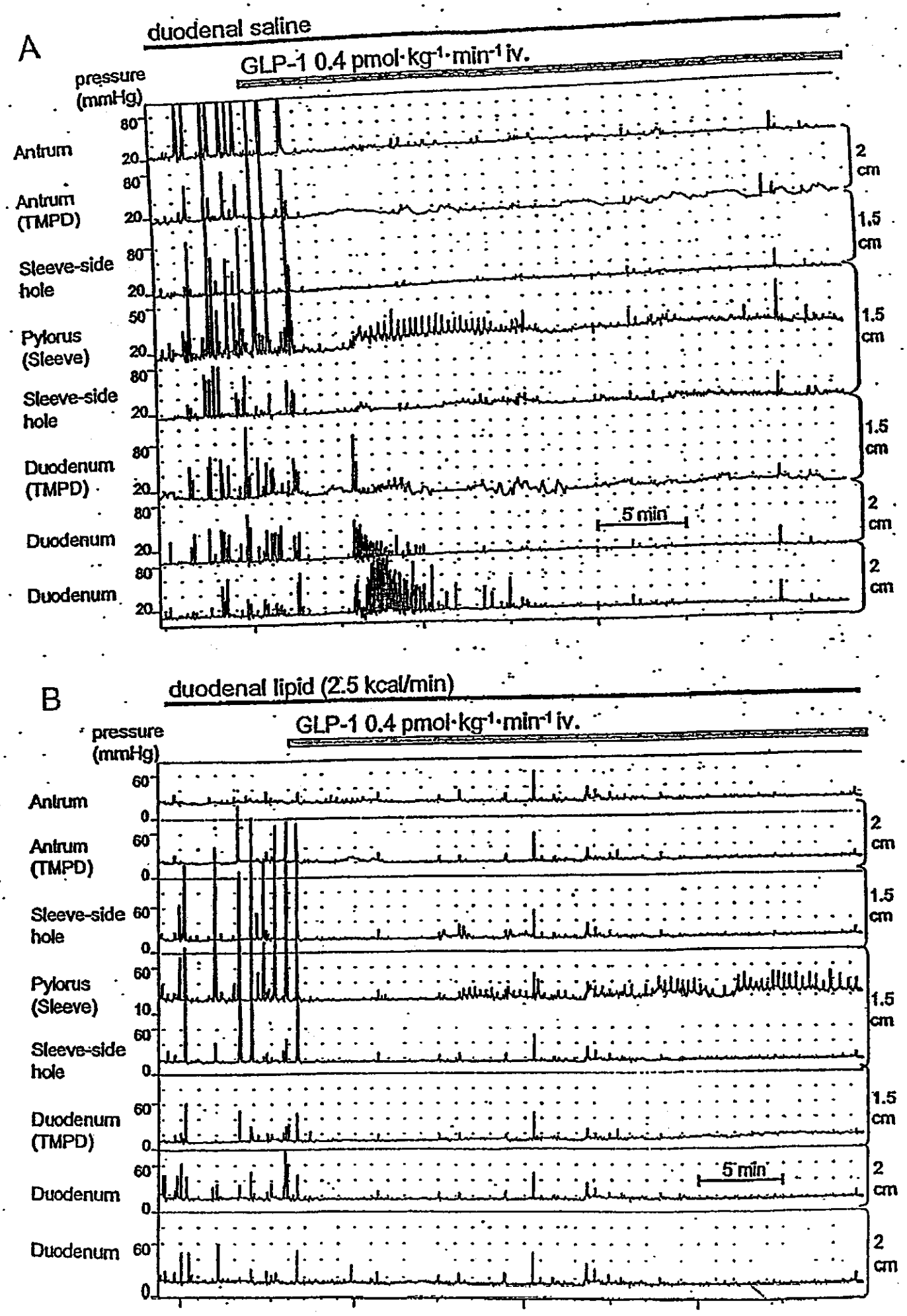
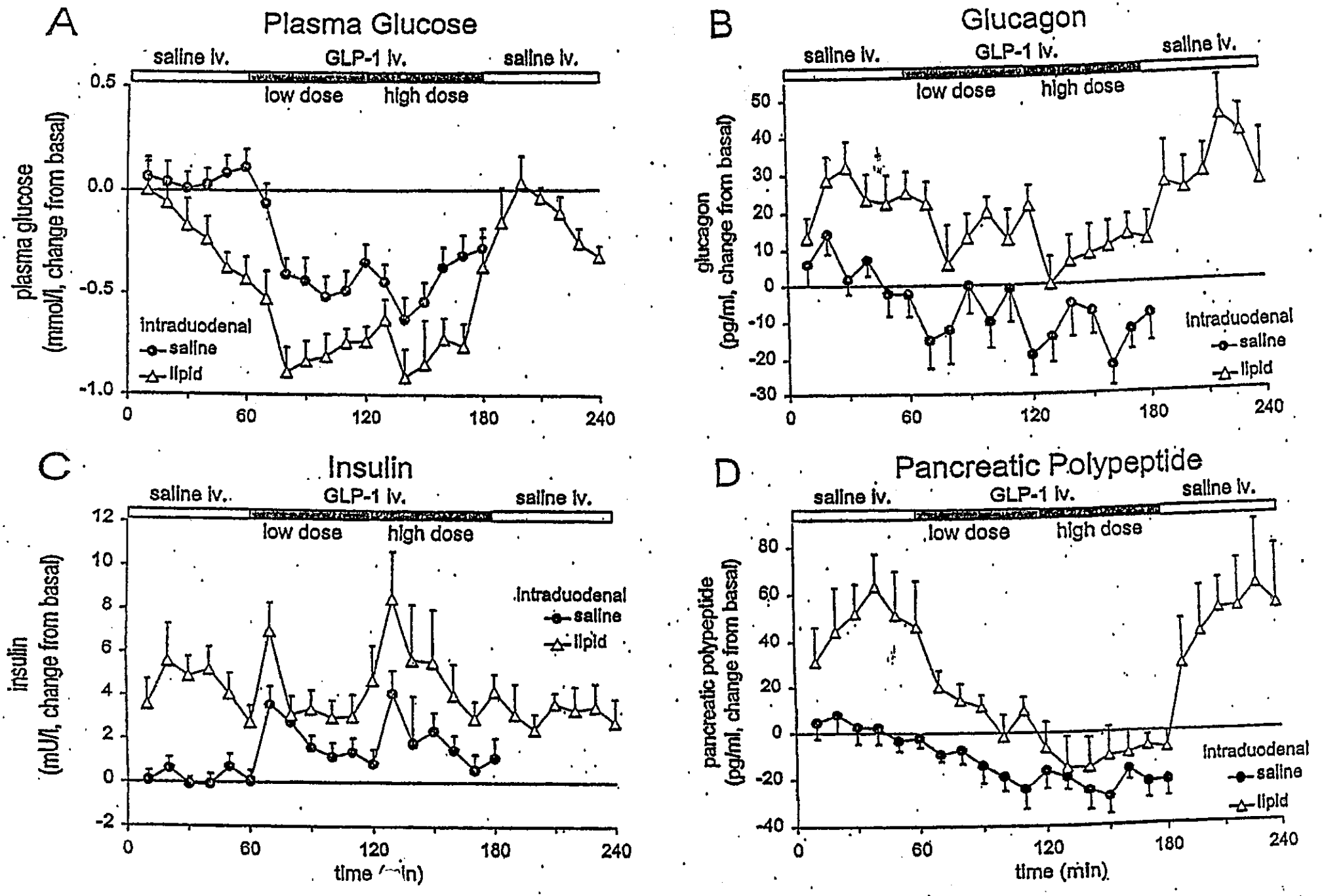

A
duodenal saline
GLP-1 0.4 pmol·kg-1·min-1 iv.
pressure (mmHg)
Antrum
Antrum (TMPD)
Sleeve-side hole
Pylorus (Sleeve)
Sleeve-side hole
Duodenum (TMPD)
Duodenum
Duodenum
80
20
50
2 cm
1.5 cm
5 min
B
duodenal lipid (2.5 kcal/min)
GLP-1 0.4 pmol·kg-1·min-1 iv.
pressure (mmHg)
60
0
10

FIG. 5

FIG. 6


A
Plasma Glucose
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
plasma glucose (mmol/l, change from basal)
0.5
0.0
-0.5
-1.0
intraduodenal
saline
lipid
0
60
120
180
240
B
Glucagon
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
glucagon (pg/ml, change from basal)
50
40
30
20
10
0
-10
-20
-30
intraduodenal
saline
lipid
0
60
120
180
240
C
Insulin
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
insulin (mU/l, change from basal)
12
10
8
6
4
2
0
-2
intraduodenal
saline
lipid
0
60
120
180
240
time (min)
D
Pancreatic Polypeptide
saline iv.
GLP-1 iv.
saline iv.
low dose
high dose
pancreatic polypeptide (pg/ml, change from basal)
80
60
40
20
0
-20
-40
intraduodenal
saline
lipid
0
60
120
180
240
time (min)