NIDDK Liver Transplantation Database
MANUAL OF OPERATIONS (MOOP) DEFINITION

Purpose:	This form is to be completed for each new episode of rejection. It should not be used for documenting continuing rejection episodes.
Person(s) Responsible:	LTD Clinical Coordinator.
Source(s) of Information:	Patient chart, medical records, laboratory reports, biopsy reports, PP form.
General Instructions:	Information pertaining to physical, biochemical or histological evidence that triggered suspicion of each new episode of rejection should be documented, along with other prevailing physical, biochemical and therapeutic conditions at the time. Treatment(s) for this episode, as well as outcome(s) should be recorded.

I. EPISODE NUMBER

The 1st, 2nd, 3rd, etc. new episode of rejection for a given graft.

Completing Form: Specify the number for this new episode of rejection. Start with "1" for the first episode after each new graft.

I.1 WHAT TRIGGERED SUSPICION OF REJECTION EPISODE?

Check whether it was physical, biochemical or histologic evidence that triggered suspicion of rejection episode:

I.1.1 Clinical symptoms could include fever, abdominal pain, change in bile output, color or viscosity, etc.
I.1.2 Increased LFT's may be an increase in GGT, AST, etc.
I.1.3 Biopsy results showing rejection, i.e. if a protocol biopsy shows rejection but patient is asymptomatic or LFT's are stable.

Completing Form: Check, as appropriate, one or more of the categories described above. If rejection is discovered by protocol biopsy alone and is not suspected until results state rejection, check biopsy results only.

I.2 PATIENT'S IMMUNOSUPPRESSIVE THERAPY AT TIME OF SUSPECTED REJECTION

The immunosuppressive therapy at the time of suspected rejection may be one of the following:

I.2.1 The patient is receiving the standard protocol immunosuppressive therapy for that institution.
I.2.2 Reduced, if any of the standard protocol immunosuppressive therapies are stopped or decreased or never started due to any number of circumstances.
I.2.3 None, if for some reason all immunosuppressive therapy has been stopped (e.g. severe infection).

Completing Form: Check only one of the three available choices. If "protocol" or "reduced", check all the immunosuppressive medications being given at the time of suspected rejection. If medication is not listed, check "other" and specify.

I.3 OTHER ASSOCIATED CONDITIONS AT TIME OF SUSPECTED REJECTION

Any of the listed conditions could be actively present at the time rejection was suspected or diagnosed by protocol biopsy.

I.3.1 Biliary leak: a bile leak from any biliary source; e.g. anastomosis or bile tube tract, documented by a cholangiogram.

I.3.2 Biliary stenosis: narrowing/stricturing of the bile duct as documented by a cholangiogram.

I.3.3 Hepatic artery thrombosis: documented by ultrasound, and/or angiogram.

I.3.4 CMV infection: documented by positive IgM, positive culture or histology.

I.3.5 Other viral infections: include HSV, HZV, EBV, viral hepatitis (A, B, C, Delta), HIV or any other significant viral infection.

I.3.6 Bacterial cholangitis: documented by positive bacterial cultures in bile.

I.3.7 Bacterial infection: include UTI, line-related bacteremia, bacteremia of known/unknown etiology, SBP, liver abscess, wound infection, bacterial pneumonitis, etc. These should be documented by positive bacterial cultures. Exclude bacterial cholangitis.

I.3.8 Other infections, specify: an "other" type of infection other than bacterial or viral. Include fungal or protozoal. The types of infection could be pneumocystis carinii involving the lung; toxoplasmosis which may involve lung, blood, CNS; candida infection involving blood, lung, wound, etc.;aspergillus of the lung; or cryptococcus involving the lung, CNS, with occasional spread to kidneys, bone and skin.

I.3.9 Portal vein thrombosis: documented by ultrasound and/or angiogram.

I.3.10 Hepatic vein thrombosis: documented by ultrasound and/or angiogram.

I.3.11 Other: any "other" significant problems, such as IVC thrombosis/obstruction, congestive heart failure, cancer, renal failure, etc.

Completing Form: Check "yes" if there were associated conditions, and check all the conditions that apply. For "other infections", specify type of infection (e.g. candida/wound). If there were any other conditions not on the list that occurred at this timepoint, specify under "Other". If there were more than one "other", record the remainder under "COMMENTS" (section VII), starting with the section no. and item no. (e.g. "I.3.12 Other: . . .").

If "no" is checked, proceed to I.4.

I.4 DATE REJECTION DIAGNOSED AND/OR FIRST DAY OF TREATMENT

Date rejection diagnosed can be 1) the date of the biopsy specimen, the results of which showed rejection; or 2) if biopsy results do not show rejection or if biopsy was not done, the date that treatment was initiated for suspected rejection based on clinical symptoms and/or increased LFT's.

Completing Form: Record the date as month, day and year.

II. TREATMENT GIVEN?

Treatment may not be given for a variety of reasons (e.g. LFT's already improving). If treatment was given specifically to treat this episode of rejection, it may be primary, secondary or tertiary treatment.

1) Primary treatment - the first treatment used for rejection (e.g. solumedrol bolus). A biopsy should be done after this first treatment.

2) Secondary treatment - may be necessary based on biopsy/biochemical results (e.g. OKT3). A biopsy should be done after this second treatment.

3) Tertiary treatment - a third treatment may be necessary based on biopsy/biochemical results (e.g. recycle corticosteroids, etc.). A liver biopsy should again be done after this third treatment.

Patients given FK506 as treatment are recorded as 1 month of treatment. The total dose may be N/A.

Completing Form: Check "no" if no treatment was given and specify reason in space provided. Check “yes" if treatment was given and check from the list provided, the medications given as primary, secondary or tertiary treatment, the inclusive dates that they were given, the total dose for bolus corticosteroids and FK 506, and the range of doses for recycle corticosteroids. If medications other than those listed were given, specify under "other" and provide the appropriate dates. If more than 4 "other" medications were given, record the remainder under "COMMENTS" (section VII), starting with the section no. and item no. (e.g. "II.2.11 Other: . . .").

III.1 WAS INITIAL LIVER BIOPSY DONE?

This should be the biopsy that was either done to confirm a suspected rejection or the protocol biopsy that showed rejection. The biopsy results should reflect the type of rejection as recorded on the Pathology Form (PP) or on the biopsy results sheet.

Consistent with, but not diagnostic of acute cellular rejection (III.1.3.5) was added to the form on February 26, 1991. Records prior to this date may have a missing value for this question.

Completing Form: Check whether an initial liver biopsy was done. If "yes":

III.1.1 Record date of liver biopsy as month, day and year.
III.1.2 Check "yes" for protocol biopsy, or "no" if biopsy was done to confirm a suspected complication.
III.1.3 Check the appropriate category for the biopsy results, whether 1) acute, 2) chronic, 3) no rejection, 4) nondiagnostic or 5) consistent with, but not diagnostic of acute

cellular rejection.

III.2 WAS LIVER BIOPSY REPEATED AFTER PRIMARY TREATMENT?

A liver biopsy should be repeated after primary treatment has been completed (or near completion) to check on the histological status of this rejection episode. If there was no primary treatment, this section would not be applicable.

Completing Form:

1. Check whether a biopsy was repeated. If "yes":

   III.2.1 Record the date of the biopsy as month, day and year.
   III.2.2 Check one of the appropriate responses for biopsy results as determined from the Pathology Form (PP) or from the biopsy report.

2. If there was no primary treatment, check "NA".

III.3 WAS LIVER BIOPSY REPEATED AFTER SECONDARY TREATMENT?

A repeat biopsy should be done after secondary treatment has been given. If there was no secondary treatment, this section would be not applicable.

Completing Form:

1. Check whether a biopsy was repeated. If "yes":

   III.3.1 Record the date of the biopsy as month, day and year.
   III.3.2 Check one of the appropriate responses for biopsy results as determined from the Pathology Form (PP) or from the biopsy report.

2. If there was no secondary treatment, check "NA".

IV. BIOCHEMICAL PARAMETERS

The liver function tests (LFT's) done at 4 different timepoints are required:

A. At a timepoint closest to but prior to this episode of rejection.
B. At the time of diagnosis prior to treatment for this episode of rejection. This may be the same date as the first treatment date if the treatment was started after the blood draw.
C. At the end of all treatment for this episode of rejection.
D. One week after the end of all treatment for this episode of rejection.

Completing Form: For each timepoint:

IV.1 Record the date of the blood sample as month, day and year.

IV.2 Specify whether the tests were done at the clinical center.

IV.3 Alkaline phosphatase - record as _ _ _ _ U/L
normal range: 30 to 530 U/L
edit range: 30 to 5000 U/L

IV.4 Total bilirubin - record as _ _._ mg/dl
normal range: 0.0 to 1.2 mg/dl
edit range: 0.0 to 76.0 mg/dl

IV.5 Direct bilirubin - record as _ _._ mg/dl
normal range: 0.0 to 0.3 mg/dl
edit range: 0.0 to 50.0 mg/dl

IV.6 Gamma GTP - record as _ _ _ _ U/L
normal range: 6 to 85 U/L
edit range: 1 to 1,500 U/L

IV.7 SGOT (AST) - record as _ _ _ _ _ U/L
normal range: 0 to 40 U/L
edit range: 0 to 10,000 U/L

IV.8 SGPT (ALT) - record as _ _ _ _ _ U/L
normal range: 2 to 56 U/L
edit range: 1 to 5,000 U/L

V. OVERALL OUTCOME OF REJECTION EPISODE

At the end of the rejection episode, after all treatment is complete, outcome can be based on 1) histologic; 2) biochemical; and/or 3) clinical results.

Note that the date of evaluation must be on or after all treatment is complete.

Outcome may be 1) resolving rejection; 2) continued or persistent rejection; and 3) rejection was resolved. The date was recorded for all resolved outcomes and for some resolving or continued outcomes.

Completing Form:

1. Record the date of evaluation for outcome of rejection episode.
2. Check all of the choices (histologic, biochemical or clinical) that are applicable, and check the outcome for each. In the case of resolution, provide the date that it was determined that rejection was resolved.

VI. PATIENT/GRAFT STATUS

The status of the patient (whether alive, retransplanted or died) and the status of the graft (survived or failed).

Completing Form: Check as appropriate one of the options provided, and record the date as month, day, year.

VII. COMMENTS

Any important events related to the rejection episode that have not already been documented on the form should be noted here.

Completing Form: Check "yes" if there are any comments and record comments in the space provided.