VIBRIO PARAHAEOMOLYTICS IN SEAWATER OFF
THE PACIFIC COAST OF PANAMA*

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Abstract. The presence of Vibrio parahaemolyticus in Panamá is reported. It was
recovered from seawater off the Pacific coastline and in the channel of the Panama Canal.
This is the first time this organism has been isolated in Panamá.

The purpose of this report is to record the
recovery of Vibrio parahaemolyticus from sea-
water in Panamá. To our knowledge, this organ-
ism has not been reported from Central or South
America.

Vibrio parahaemolyticus, an enteropathogenic
Gram-negative halophilic bacterium is the major
etiologic agent of acute gastroenteritis in Japan
and has been found widely distributed in the
coastal seawaters of Japan, the Philippines, Tai-
wan, Hong Kong, and Singapore.

Recently, in the United States, this same organ-
ism has been reported as the etiologic cause of
common-source gastroenteritis outbreaks from
Atlantic, Pacific, and Gulf Coast States, and from
Hawaii. Vibrios were isolated from patients's
stool specimens and from a variety of seafoods
such as the Chesapeake Bay blue crab and
shellfish from the Pacific Coast.

Recognition of V. parahaemolyticus as a poten-
tial pathogen in the diarrheal diseases of Panamá
became a major concern to us since surveys of
enteropathogens carried out in this country have
revealed a low prevalence of the commonly sought
enteropathogens. We were prompted to in-
vestigate the presence of V. parahaemolyticus to see
whether or not some of the undifferentiated cases
of diarrhea could be attributed to this organism.
We began our bacteriological assessment of sea-
water, fly, shellfish, and other marine food from
the Pacific Coast of Panamá. All diarrheal cases
that came to our attention were also promptly
investigated for the presence of this vibrio.

Accepted 29 December 1973.

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MATERIALS AND METHODS

We sampled seawater from the Bay of Panamá,
along a section of coastline which included the
channel at the Pacific entrance to the Panama
Canal, and offshore sites along the coast up to
25 miles to the west of the Canal. Samples were
also taken within the Canal and at the Balboa
Yacht Club where small pleasure craft are
anchored. There was no consistent pattern in
the sampling except that the samples were taken
at random, at a depth of about one foot, and at
distances of 100 to 1,000 yards from shore. The
particular coastal area which was surveyed and
the approximate sampling sites are shown in
Figure 1.

Water samples were collected in sterile bottles
and brought to the laboratory on the day of
collection. Aliquot parts of the samples were
streaked on thiosulfate-citrate-bile-salts-sucrose
agar (TCBS) and incubated in double-strength
glucose salt Teepol broth (GSTB). After incuba-
tion of the broth at 35°C for 18 hours, a second
set of TCBS agar plates were streaked with
aliquots of the broth and incubated. All plates
were examined 24 and 48 hours after incubation
for typical blue-green small colonies. Isolation
and identification of colonies suspected of being
V. parahaemolyticus followed the procedures out-
lined by the United States Food and Drug Admin-
istration.

RESULTS AND DISCUSSION

Samples of seawater were collected from 20
sites; 6 were found positive for V. parahaemo-
yticus. Five of 6 strains isolated hemolysed rabbit
crythrocytes; all 6 failed to break down sucrose.
The organisms were further identified according
to morphological and biochemical characteristics
and subsequently were confirmed by the Center
for Disease Control, Atlanta, Georgia.

All but one of the vibrio isolates were recovered
VIBRIO PARahaEMOLYTICUS IN PANAMA

Figure 1. Section of the Pacific coastline of Panama showing sampling sites; solid circles indicate areas where V. parahaemolyticus was recovered, open circles where it was not.

from waters within the channel or near the approaches to the entry and exit of the Panama Canal, including the water at the dock of the Balboa Yacht Club. The single culture not isolated in or near the Canal, was recovered 100 yards offshore, in front of a small village, 25 miles west of the Panama Canal (Fig. 1).

Infections by V. parahaemolyticus are uncommon in the Western Hemisphere, but cases and outbreaks of diarrhea in North America caused by this organism have become more common in recent years. This is due to an increased awareness of the role and danger of this vibrio as a pathogen in shellfish and fish-related gastroenteritis, its wide geographic distribution in the marine environment, and the availability of newer specific media and better screening methods to detect this organism in the laboratory.

This report confirms the presence of V. parahaemolyticus in Panama and adds one more geographic area to the list of places in which this organism is now known to occur.

ACKNOWLEDGMENT

The authors express their appreciation to Dr. Robert E. Weaver, Center for Disease Control, Atlanta, Georgia, for confirmation of the cultures of V. parahaemolyticus.

REFERENCES


