WEBVTT

NOTE duration:"00:23:48.3520000"

NOTE language:en-us

NOTE Confidence: 0.896725594997406

00:00:00.000 --> 00:00:02.844 Uhm, I know a lot of you guys already,

NOTE Confidence: 0.896725594997406

00:00:02.850 --> 00:00:04.596 but I'm one of the clinical

NOTE Confidence: 0.896725594997406

00:00:04.596 --> 00:00:06.600 hematologist here at the Cancer Center,

NOTE Confidence: 0.896725594997406

00:00:06.600 --> 00:00:08.680 and for the last nine years my main

NOTE Confidence: 0.896725594997406

00:00:08.680 --> 00:00:10.376 interest have been medical education

NOTE Confidence: 0.896725594997406

00:00:10.376 --> 00:00:12.236 and thrombosis or blood clotting.

NOTE Confidence: 0.896725594997406

00:00:12.240 --> 00:00:14.520 And then in mid March of this year

NOTE Confidence: 0.896725594997406

00:00:14.520 --> 00:00:16.555 Is everybody knows kovid hit and so

NOTE Confidence: 0.896725594997406

00:00:16.555 --> 00:00:18.763 early on when the first kovid patient

NOTE Confidence: 0.896725594997406

00:00:18.763 --> 00:00:20.995 arrived at Yale New Haven Hospital.

NOTE Confidence: 0.896725594997406

00:00:21.000 --> 00:00:22.918 A few of us in the hematology

NOTE Confidence: 0.896725594997406

00:00:22.918 --> 00:00:25.033 section were asked to join a multi

NOTE Confidence: 0.896725594997406

00:00:25.033 --> 00:00:26.573 disciplinary effort designed to try

NOTE Confidence: 0.896725594997406

00:00:26.573 --> 00:00:28.829 to understand in combat the disease,

NOTE Confidence: 0.896725594997406

00:00:28.830 --> 00:00:31.656 an one of the more interesting and kind of.

NOTE Confidence: 0.896725594997406

00:00:31.660 --> 00:00:33.096 Unexpected features of COVID-19

NOTE Confidence: 0.896725594997406

00:00:33.096 --> 00:00:34.891 infection was that there's actually

NOTE Confidence: 0.896725594997406

00:00:34.891 --> 00:00:37.030 a huge component of blood clotting,

NOTE Confidence: 0.896725594997406

00:00:37.030 --> 00:00:39.172 and this is something that's term

NOTE Confidence: 0.896725594997406

00:00:39.172 --> 00:00:40.243 COVID-19 associated Coagulopathy.

NOTE Confidence: 0.896725594997406

00:00:40.250 --> 00:00:42.840 So we became interested in the hematology

NOTE Confidence: 0.896725594997406

00:00:42.840 --> 00:00:45.365 section and trying to not just manage

NOTE Confidence: 0.896725594997406

00:00:45.365 --> 00:00:47.045 this but also understand this,

NOTE Confidence: 0.896725594997406

00:00:47.050 --> 00:00:50.394 and so that's what I'm going to be

NOTE Confidence: 0.896725594997406

00:00:50.394 --> 00:00:53.108 talking with you all about today.

NOTE Confidence: 0.896725594997406

00:00:53.110 --> 00:00:53.672 So again,

NOTE Confidence: 0.896725594997406

00:00:53.672 --> 00:00:55.358 this this whole feature of blood

NOTE Confidence: 0.896725594997406

00:00:55.358 --> 00:00:57.608 clotting in Kobe 19 infection is

NOTE Confidence: 0.896725594997406

00:00:57.608 --> 00:00:59.236 something that's called COVID-19

NOTE Confidence: 0.896725594997406

00:00:59.236 --> 00:01:00.050 associated Coagulopathy.

NOTE Confidence: 0.896725594997406

00:01:00.050 --> 00:01:02.633 Its abbreviated CAC and at the laboratory

NOTE Confidence: 0.896725594997406

00:01:02.633 --> 00:01:04.907 level it's defined by 4 basic things.

NOTE Confidence: 0.896725594997406

00:01:04.910 --> 00:01:06.908 So one is that these patients

NOTE Confidence: 0.896725594997406

00:01:06.908 --> 00:01:08.730 have an elevated D dimer.

NOTE Confidence: 0.896725594997406

00:01:08.730 --> 00:01:10.460 That's often very, very high.

NOTE Confidence: 0.896725594997406

00:01:10.460 --> 00:01:12.542 The second is that they have

NOTE Confidence: 0.896725594997406

00:01:12.542 --> 00:01:13.930 a high fibrinogen level.

NOTE Confidence: 0.896725594997406

00:01:13.930 --> 00:01:15.670 Again, that's often very high.

NOTE Confidence: 0.896725594997406

00:01:15.670 --> 00:01:18.022 The third is that many of these patients

NOTE Confidence: 0.896725594997406

00:01:18.022 --> 00:01:20.180 have a normal prothrombin time,

NOTE Confidence: 0.896725594997406

00:01:20.180 --> 00:01:22.256 or very slightly elevated prothrombin time,

NOTE Confidence: 0.896725594997406

00:01:22.260 --> 00:01:23.232 and the 4th.

NOTE Confidence: 0.896725594997406

00:01:23.232 --> 00:01:25.500 Is that most of them have normal

NOTE Confidence: 0.896725594997406

00:01:25.576 --> 00:01:26.730 platelet counts,

NOTE Confidence: 0.896725594997406

00:01:26.730 --> 00:01:29.278 although some of them do have a

NOTE Confidence: 0.896725594997406

00:01:29.278 --> 00:01:30.820 slightly reduced platelet count.

NOTE Confidence: 0.896725594997406

00:01:30.820 --> 00:01:33.046 And again, as I mentioned before,

NOTE Confidence: 0.896725594997406

00:01:33.050 --> 00:01:34.538 clinically the main feature

NOTE Confidence: 0.896725594997406

00:01:34.538 --> 00:01:36.398 associated with code 19 associated

NOTE Confidence: 0.896725594997406

00:01:36.398 --> 00:01:37.519 Coagulopathy is thrombosis.

NOTE Confidence: 0.896725594997406

00:01:37.520 --> 00:01:40.026 So these patients have a very high

NOTE Confidence: 0.896725594997406

00:01:40.026 --> 00:01:41.979 risk of developing blood clots,

NOTE Confidence: 0.896725594997406

00:01:41.980 --> 00:01:43.840 predominantly venous thromboembolism or VTE,

NOTE Confidence: 0.896725594997406

00:01:43.840 --> 00:01:45.700 and in particular pulmonary embolism.

NOTE Confidence: 0.896725594997406

00:01:45.700 --> 00:01:47.860 There are some single institution

NOTE Confidence: 0.896725594997406

00:01:47.860 --> 00:01:50.568 studies that suggest that up to 37

NOTE Confidence: 0.896725594997406

00:01:50.568 --> 00:01:52.420 to even 40% of COVID-19 patients

NOTE Confidence: 0.896725594997406

00:01:52.420 --> 00:01:54.320 in an intensive care unit.

NOTE Confidence: 0.896725594997406

00:01:54.320 --> 00:01:56.475 Who are ready on prophylactic

NOTE Confidence: 0.896725594997406

00:01:56.475 --> 00:01:58.630 anticoagulation will develop a pulmonary

NOTE Confidence: 0.896725594997406

00:01:58.701 --> 00:02:00.855 embolism or a deep vein thrombosis.

NOTE Confidence: 0.896725594997406

00:02:00.860 --> 00:02:03.692 And In addition Artur thrombosis an

NOTE Confidence: 0.896725594997406

00:02:03.692 --> 00:02:05.580 then microvascular thrombosis on

NOTE Confidence: 0.896725594997406

00:02:05.650 --> 00:02:08.010 autopsies has also been described.

NOTE Confidence: 0.896725594997406

00:02:08.010 --> 00:02:10.278 So because of this very high rate

NOTE Confidence: 0.896725594997406

00:02:10.278 --> 00:02:12.330 of thrombosis are hospital system,

NOTE Confidence: 0.896725594997406

00:02:12.330 --> 00:02:13.805 our institution was actually one

NOTE Confidence: 0.896725594997406

00:02:13.805 --> 00:02:16.137 of the first in the country to

NOTE Confidence: 0.896725594997406

00:02:16.137 --> 00:02:18.519 develop what we call an escalated

NOTE Confidence: 0.896725594997406

00:02:18.519 --> 00:02:19.890 intensity anticoagulation regiment.

NOTE Confidence: 0.896725594997406

00:02:19.890 --> 00:02:22.698 So what I mean by this is that as

NOTE Confidence: 0.896725594997406

00:02:22.698 --> 00:02:25.649 most of you who are clinicians know,

NOTE Confidence: 0.896725594997406

00:02:25.650 --> 00:02:27.435 whenever patients in general get

NOTE Confidence: 0.896725594997406

00:02:27.435 --> 00:02:29.610 admitted to the hospital already there,

NOTE Confidence: 0.896725594997406

00:02:29.610 --> 00:02:31.710 blood clotting risk goes up and

NOTE Confidence: 0.896725594997406

00:02:31.710 --> 00:02:33.842 so most patients admitted to a

NOTE Confidence: 0.896725594997406

00:02:33.842 --> 00:02:35.170 hospital center including Smilow

NOTE Confidence: 0.896725594997406

00:02:35.170 --> 00:02:38.522 would be on what we call a low dose

NOTE Confidence: 0.896725594997406

00:02:38.522 --> 00:02:39.698 of prophylactic anticoagulation.

NOTE Confidence: 0.896725594997406

00:02:39.700 --> 00:02:40.047 Typically,

NOTE Confidence: 0.896725594997406

00:02:40.047 --> 00:02:42.129 enoxaparin had a dose of 40

NOTE Confidence: 0.896725594997406

00:02:42.129 --> 00:02:43.490 milligrams once a day.

NOTE Confidence: 0.896725594997406

00:02:43.490 --> 00:02:44.826 But in kovid patients,

NOTE Confidence: 0.896725594997406

00:02:44.826 --> 00:02:46.830 because of this increase risk of

NOTE Confidence: 0.896725594997406

00:02:46.897 --> 00:02:49.597 Trumbo Sis we adopted this escalated

NOTE Confidence: 0.896725594997406

00:02:49.597 --> 00:02:50.947 intensity anticoagulation regiment

NOTE Confidence: 0.896725594997406

00:02:50.947 --> 00:02:52.920 so that patients with Cove in

NOTE Confidence: 0.896725594997406

00:02:52.920 --> 00:02:55.016 infection who had a D dimer level

NOTE Confidence: 0.896725594997406

00:02:55.016 --> 00:02:57.242 that was above a certain cut off

NOTE Confidence: 0.896725594997406

00:02:57.242 --> 00:02:59.569 which we ended up choosing us 5

NOTE Confidence: 0.896725594997406

00:02:59.569 --> 00:03:00.865 milligram per liter would

NOTE Confidence: 0.888363063335419

00:03:00.935 --> 00:03:02.787 automatically get a higher

NOTE Confidence: 0.888363063335419

00:03:02.787 --> 00:03:04.176 dose of anticoagulation.

NOTE Confidence: 0.888363063335419

00:03:04.180 --> 00:03:05.990 We would call this intermediate

NOTE Confidence: 0.888363063335419

00:03:05.990 --> 00:03:06.714 enoxaparin typically,

NOTE Confidence: 0.888363063335419

00:03:06.720 --> 00:03:09.608 which is at a dose of 0.5 milligrams

NOTE Confidence: 0.888363063335419

00:03:09.608 --> 00:03:12.177 per kilogram twice a day and then

NOTE Confidence: 0.888363063335419

00:03:12.177 --> 00:03:14.390 again because of this super high.

NOTE Confidence: 0.888363063335419

00:03:14.390 --> 00:03:16.196 Risk of thrombosis in any covert

NOTE Confidence: 0.888363063335419

00:03:16.196 --> 00:03:18.821 patient in whom there is a suspicion for

NOTE Confidence: 0.888363063335419

00:03:18.821 --> 00:03:20.521 venous thrombotic event or confirmed

NOTE Confidence: 0.888363063335419

00:03:20.521 --> 00:03:22.872 Venus Don Bolic event we would

NOTE Confidence: 0.888363063335419

00:03:22.872 --> 00:03:24.432 recommend full dose anticoagulation

NOTE Confidence: 0.888363063335419

00:03:24.432 --> 00:03:26.009 typically again with enoxaparin

NOTE Confidence: 0.888363063335419

00:03:26.009 --> 00:03:28.367 editors of 1 milligram per kilogram

NOTE Confidence: 0.888363063335419

00:03:28.367 --> 00:03:30.398 twice daily so as I mentioned we

NOTE Confidence: 0.888363063335419

00:03:30.398 --> 00:03:32.275 were one of the first hospital

NOTE Confidence: 0.888363063335419

00:03:32.275 --> 00:03:34.567 centers in the country to develop.

NOTE Confidence: 0.888363063335419

00:03:34.570 --> 00:03:36.500 One of these escalated escalated

NOTE Confidence: 0.888363063335419

00:03:36.500 --> 00:03:37.658 anticoagulation dosing guidelines

NOTE Confidence: 0.888363063335419

00:03:37.658 --> 00:03:40.022 and many other hospitals if not most

NOTE Confidence: 0.888363063335419

00:03:40.022 --> 00:03:41.880 around the country have followed suit.

NOTE Confidence: 0.888363063335419

00:03:41.880 --> 00:03:43.650 One of the challenges that

NOTE Confidence: 0.888363063335419

00:03:43.650 --> 00:03:45.420 we've all had his clinicians.

NOTE Confidence: 0.888363063335419

00:03:45.420 --> 00:03:46.820 Is that even though most of us

NOTE Confidence: 0.888363063335419

00:03:46.820 --> 00:03:48.629 in the country are doing these

NOTE Confidence: 0.888363063335419

00:03:48.629 --> 00:03:49.787 escalated anticoagulation regiments,

NOTE Confidence: 0.888363063335419

00:03:49.790 --> 00:03:51.708 we don't actually know if they're safe

NOTE Confidence: 0.888363063335419

00:03:51.708 --> 00:03:53.828 or if there even affective and so at

NOTE Confidence: 0.888363063335419

00:03:53.828 --> 00:03:55.977 yell our group is in the process of

NOTE Confidence: 0.888363063335419

00:03:55.977 --> 00:03:57.972 analyzing this now as are many others

NOTE Confidence: 0.888363063335419

00:03:57.980 --> 00:03:59.756 and there are some clinical trials

NOTE Confidence: 0.888363063335419

00:03:59.756 --> 00:04:01.225 around different institutions in the

NOTE Confidence: 0.888363063335419

00:04:01.225 --> 00:04:02.884 country that are looking at this issue.

NOTE Confidence: 0.888363063335419

00:04:02.890 --> 00:04:05.530 This question as well.

NOTE Confidence: 0.888363063335419

00:04:05.530 --> 00:04:07.371 So one of the early studies that

NOTE Confidence: 0.888363063335419

00:04:07.371 --> 00:04:09.465 came out from China on covert

NOTE Confidence: 0.888363063335419

00:04:09.465 --> 00:04:11.117 associated Coagulopathy reported that

NOTE Confidence: 0.888363063335419

00:04:11.117 --> 00:04:13.990 it was essentially a variation of

NOTE Confidence: 0.888363063335419

00:04:13.990 --> 00:04:15.565 disseminated intravascular coagulations,

NOTE Confidence: 0.888363063335419

00:04:15.570 --> 00:04:16.128 or DIC,

NOTE Confidence: 0.888363063335419

00:04:16.128 --> 00:04:18.806 which as most of you all know as sort

NOTE Confidence: 0.888363063335419

00:04:18.806 --> 00:04:21.438 of an end point of a coagulopathic

NOTE Confidence: 0.888363063335419

00:04:21.438 --> 00:04:23.243 picture that's characterized by

NOTE Confidence: 0.888363063335419

00:04:23.243 --> 00:04:25.683 pretty high rates of thrombosis

NOTE Confidence: 0.888363063335419

00:04:25.683 --> 00:04:27.147 and terminal disease.

NOTE Confidence: 0.888363063335419

00:04:27.150 --> 00:04:29.412 But DIC itself again as a

NOTE Confidence: 0.888363063335419

00:04:29.412 --> 00:04:31.390 lot of other clinicians know,

NOTE Confidence: 0.888363063335419

00:04:31.390 --> 00:04:33.706 has a very characteristic laboratory pattern,

NOTE Confidence: 0.888363063335419

00:04:33.710 --> 00:04:36.405 and to us it really didn't seem.

NOTE Confidence: 0.888363063335419

00:04:36.410 --> 00:04:38.314 White covered associated Coagulopathy

NOTE Confidence: 0.888363063335419

00:04:38.314 --> 00:04:41.170 was similar to DIC at all.

NOTE Confidence: 0.888363063335419

00:04:41.170 --> 00:04:43.634 So early on when we start first started

NOTE Confidence: 0.888363063335419

00:04:43.634 --> 00:04:45.800 seeing kovid patients in our hospital,

NOTE Confidence: 0.888363063335419

00:04:45.800 --> 00:04:47.864 we decided to do a couple of studies

NOTE Confidence: 0.888363063335419

00:04:47.864 --> 00:04:50.101 to try to understand what the

NOTE Confidence: 0.888363063335419

00:04:50.101 --> 00:04:51.753 code associated Coagulopathy is.

NOTE Confidence: 0.888363063335419

00:04:51.760 --> 00:04:53.992 And so this first study that we did

NOTE Confidence: 0.888363063335419

00:04:53.992 --> 00:04:56.872 was led by one of our star first

NOTE Confidence: 0.888363063335419

00:04:56.872 --> 00:04:58.376 Hematology Fellows George Joshua,

NOTE Confidence: 0.888363063335419

00:04:58.380 --> 00:05:00.963 and what we did here was to look at

NOTE Confidence: 0.888363063335419

00:05:00.963 --> 00:05:03.676 the 1st 200 plus patients with Kobe,

NOTE Confidence: 0.888363063335419

00:05:03.680 --> 00:05:05.815 who are admitted to our hospital and

NOTE Confidence: 0.888363063335419

00:05:05.815 --> 00:05:07.755 we calculated what's called a dic

NOTE Confidence: 0.888363063335419

00:05:07.755 --> 00:05:09.681 score at specified by the International

NOTE Confidence: 0.888363063335419

00:05:09.681 --> 00:05:11.620 Society of thrombosis and hemostasis,

NOTE Confidence: 0.888363063335419

00:05:11.620 --> 00:05:12.337 or IST age.

NOTE Confidence: 0.888363063335419

00:05:12.337 --> 00:05:14.448 And so the way this works is that

NOTE Confidence: 0.888363063335419

00:05:14.448 --> 00:05:16.704 the ice TH score essentially looks

NOTE Confidence: 0.888363063335419

00:05:16.704 --> 00:05:18.667 at different laboratory features of

NOTE Confidence: 0.888363063335419

00:05:18.667 --> 00:05:20.587 patients suspected of having DIC,

NOTE Confidence: 0.888363063335419

00:05:20.590 --> 00:05:22.760 and then it spits out a score.

NOTE Confidence: 0.888363063335419

00:05:22.760 --> 00:05:25.248 And if your score is in the range

NOTE Confidence: 0.888363063335419

00:05:25.248 --> 00:05:26.479 of five and up,

NOTE Confidence: 0.888363063335419

00:05:26.480 --> 00:05:28.070 then that's considered overt DIC

NOTE Confidence: 0.888363063335419

00:05:28.070 --> 00:05:30.002 in anything less than five is

NOTE Confidence: 0.888363063335419

00:05:30.002 --> 00:05:31.437 not consistent with over DSD.

NOTE Confidence: 0.888363063335419

00:05:31.440 --> 00:05:33.680 And so in our first couple 100 patients

NOTE Confidence: 0.888363063335419

00:05:33.680 --> 00:05:35.777 with Cobain infection admitted to Yale,

NOTE Confidence: 0.888363063335419

00:05:35.780 --> 00:05:37.330 New Haven Hospital when we

NOTE Confidence: 0.888363063335419

00:05:37.330 --> 00:05:38.880 calculated the IST FDIC scores,

NOTE Confidence: 0.888363063335419

00:05:38.880 --> 00:05:41.127 whether we were looking at patients who

NOTE Confidence: 0.888363063335419

00:05:41.127 --> 00:05:43.220 survived or patients who did not survive.

NOTE Confidence: 0.888363063335419

00:05:43.220 --> 00:05:44.404 As you can see,

NOTE Confidence: 0.888363063335419

00:05:44.404 --> 00:05:46.562 almost all patients had a very low

NOTE Confidence: 0.888363063335419

00:05:46.562 --> 00:05:48.760 IST HDC score in this entire group.

NOTE Confidence: 0.888363063335419

00:05:48.760 --> 00:05:50.422 There was only one patient who

NOTE Confidence: 0.888363063335419

00:05:50.422 --> 00:05:51.530 had an IST HD

NOTE Confidence: 0.877944767475128

00:05:51.601 --> 00:05:53.995 score of six consistent with over DIC,

NOTE Confidence: 0.877944767475128

00:05:54.000 --> 00:05:55.946 but this is a patient who had

NOTE Confidence: 0.877944767475128

00:05:55.946 --> 00:05:57.390 helped syndrome after pregnancy,

NOTE Confidence: 0.877944767475128

00:05:57.390 --> 00:05:59.581 and we didn't think that this is

NOTE Confidence: 0.877944767475128

00:05:59.581 --> 00:06:02.059 related at all to COVID-19 infection.

NOTE Confidence: 0.877944767475128

00:06:02.060 --> 00:06:03.244 So based on this,

NOTE Confidence: 0.877944767475128

00:06:03.244 --> 00:06:05.020 we really started to feel that

NOTE Confidence: 0.877944767475128

00:06:05.087 --> 00:06:06.428 kovid associated Coagulopathy

NOTE Confidence: 0.877944767475128

00:06:06.428 --> 00:06:08.663 was not consistent with DIC,

NOTE Confidence: 0.877944767475128

00:06:08.670 --> 00:06:11.206 and so the next thing that we did

NOTE Confidence: 0.877944767475128

00:06:11.206 --> 00:06:13.472 was to perform a somewhat large

NOTE Confidence: 0.877944767475128

00:06:13.472 --> 00:06:16.269 study of a number of ICU and

NOTE Confidence: 0.877944767475128

00:06:16.269 --> 00:06:18.579 non ICU patients with Cove it,

NOTE Confidence: 0.877944767475128

00:06:18.580 --> 00:06:21.452 in which we measured lots and lots of

NOTE Confidence: 0.877944767475128

00:06:21.452 --> 00:06:22.930 different coagulations factors trying

NOTE Confidence: 0.877944767475128

00:06:22.930 --> 00:06:25.359 to see what exactly the mechanism of

NOTE Confidence: 0.877944767475128

00:06:25.359 --> 00:06:27.747 covert Coagulopathy might be an weather.

NOTE Confidence: 0.877944767475128

00:06:27.750 --> 00:06:30.498 Again this was distinct from DC.

NOTE Confidence: 0.877944767475128

00:06:30.500 --> 00:06:32.258 So this work here was carried

NOTE Confidence: 0.877944767475128

00:06:32.258 --> 00:06:34.317 out by four people who are shown

NOTE Confidence: 0.877944767475128

00:06:34.317 --> 00:06:35.949 at the bottom of the page.

NOTE Confidence: 0.877944767475128

00:06:35.950 --> 00:06:36.227 Parveen,

NOTE Confidence: 0.877944767475128

00:06:36.227 --> 00:06:38.166 but hell is one of the lab

NOTE Confidence: 0.877944767475128

00:06:38.166 --> 00:06:39.735 technicians in the Park Street Lab

NOTE Confidence: 0.877944767475128

00:06:39.735 --> 00:06:41.560 who did all of the quag elation

NOTE Confidence: 0.877944767475128

00:06:41.560 --> 00:06:43.225 testing and then George Joshua

NOTE Confidence: 0.877944767475128

00:06:43.225 --> 00:06:45.176 refers to your fellow Alex Pine,

NOTE Confidence: 0.877944767475128

00:06:45.176 --> 00:06:47.332 one of our star senior 30 or

NOTE Confidence: 0.877944767475128

00:06:47.332 --> 00:06:49.364 Fellows in he monk and then a

NOTE Confidence: 0.877944767475128

00:06:49.364 --> 00:06:51.622 super MD PhD student at my slash

NOTE Confidence: 0.877944767475128

00:06:51.622 --> 00:06:53.427 also together did this analysis.

NOTE Confidence: 0.877944767475128

00:06:53.430 --> 00:06:55.296 So first I'll starting at the

NOTE Confidence: 0.877944767475128

00:06:55.296 --> 00:06:56.540 top of the page.

NOTE Confidence: 0.877944767475128

00:06:56.540 --> 00:06:58.780 The first thing we measured were D dimer

NOTE Confidence: 0.877944767475128

00:06:58.780 --> 00:07:01.207 levels and something else called a thrombin,

NOTE Confidence: 0.877944767475128

00:07:01.210 --> 00:07:02.454 antithrombin complex or TI-80.

NOTE Confidence: 0.877944767475128

00:07:02.454 --> 00:07:04.320 So as most of you know,

NOTE Confidence: 0.877944767475128

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00:07:04.320 --> 00:07:06.656 the D dimer level is something that tends

00:07:06.656 --> 00:07:09.288 to go up on patients form blood clots,

00:07:09.290 --> 00:07:11.201 and it can often be a very

00:07:11.201 --> 00:07:13.019 useful measure of blood clotting,

00:07:13.020 --> 00:07:15.001 and one of the significant features of

00:07:15.001 --> 00:07:17.380 the D dimer is that encoded infection.

00:07:17.380 --> 00:07:19.018 the D dimer level seems to be

00:07:19.018 --> 00:07:20.984 one of the very very prominent

00:07:20.984 --> 00:07:22.979 markers of mortality and overall

00:07:22.979 --> 00:07:24.599 course clinical cores and so.

00:07:24.600 --> 00:07:26.634 It's a very useful and important

00:07:26.634 --> 00:07:27.990 marker in covert patients,

00:07:27.990 --> 00:07:29.685 both for thrombosis and also

00:07:29.685 --> 00:07:31.380 for their overall disease cores,

00:07:31.380 --> 00:07:32.541 and then thrombin,

00:07:32.541 --> 00:07:34.089 antithrombin complexes you can

NOTE Confidence: 0.877944767475128

00:07:34.089 --> 00:07:36.645 think of those as sort of a fancy

NOTE Confidence: 0.877944767475128

00:07:36.645 --> 00:07:38.390 and more specific D dimer that

NOTE Confidence: 0.877944767475128

00:07:38.390 --> 00:07:40.496 really looks at whether AD dimer

NOTE Confidence: 0.877944767475128

00:07:40.496 --> 00:07:41.888 elevation comes from activation

NOTE Confidence: 0.877944767475128

00:07:41.888 --> 00:07:43.578 of the Quag Elation Cascade.

NOTE Confidence: 0.877944767475128

00:07:43.580 --> 00:07:45.338 So when we measured D dimer

NOTE Confidence: 0.877944767475128

00:07:45.338 --> 00:07:47.200 levels an from an anti thrombin

NOTE Confidence: 0.877944767475128

00:07:47.200 --> 00:07:49.696 complex is both in ICU and non ICU

NOTE Confidence: 0.877944767475128

00:07:49.766 --> 00:07:51.718 patients with colon infection.

NOTE Confidence: 0.877944767475128

00:07:51.720 --> 00:07:54.424 We found that both of these were elevated,

NOTE Confidence: 0.877944767475128

00:07:54.430 --> 00:07:55.282 particularly in patients.

NOTE Confidence: 0.877944767475128

00:07:55.282 --> 00:07:57.912 We were in the ICU and on a separate

NOTE Confidence: 0.877944767475128

00:07:57.912 --> 00:07:59.942 analysis we found that the D dimer

NOTE Confidence: 0.877944767475128

00:07:59.942 --> 00:08:02.054 levels and from an anti thrombin

NOTE Confidence: 0.877944767475128

00:08:02.054 --> 00:08:03.466 complex is correlated together.

NOTE Confidence: 0.877944767475128

00:08:03.470 --> 00:08:05.710 So this let us know that the source

NOTE Confidence: 0.877944767475128

00:08:05.710 --> 00:08:08.612 of the high D dimer encoded associated

NOTE Confidence: 0.877944767475128

00:08:08.612 --> 00:08:10.428 Coagulopathy is indeed activation

NOTE Confidence: 0.877944767475128

00:08:10.428 --> 00:08:12.618 of the Quag Elation Cascade.

NOTE Confidence: 0.877944767475128

00:08:12.620 --> 00:08:15.059 The next thing we did was to measure a

NOTE Confidence: 0.877944767475128

00:08:15.059 --> 00:08:17.138 number of endogenous anticoagulants,

NOTE Confidence: 0.877944767475128

00:08:17.140 --> 00:08:19.228 antithrombin, protein C, and protein S,

NOTE Confidence: 0.877944767475128

00:08:19.230 --> 00:08:21.666 as well as a fire analytic enzyme

NOTE Confidence: 0.877944767475128

00:08:21.666 --> 00:08:22.710 called A2 Antiplasmin.

NOTE Confidence: 0.877944767475128

00:08:22.710 --> 00:08:24.798 So what are all of these?

NOTE Confidence: 0.877944767475128

00:08:24.800 --> 00:08:25.841 Whenever you form,

NOTE Confidence: 0.877944767475128

00:08:25.841 --> 00:08:26.882 activate coagulations through

NOTE Confidence: 0.877944767475128

00:08:26.882 --> 00:08:27.923 the coagulation cascade,

NOTE Confidence: 0.877944767475128

00:08:27.930 --> 00:08:30.198 the body has a natural mechanism to

NOTE Confidence: 0.877944767475128

00:08:30.198 --> 00:08:31.920 shut off Coagulations and therefore

NOTE Confidence: 0.877944767475128

00:08:31.920 --> 00:08:33.630 prevent from boces from getting

00:08:33.630 --> 00:08:36.182 out of control and so that natural

00:08:36.182 --> 00:08:38.017 mechanism happens through two sources.

00:08:38.020 --> 00:08:39.360 One is through endogenous

00:08:39.360 --> 00:08:41.370 anticoagulants that are designed to turn

00:08:41.426 --> 00:08:42.898 off the Coagulations Cascade,

00:08:42.900 --> 00:08:45.420 and those are these first three up.

00:08:45.420 --> 00:08:47.125 Top antithrombin protein protein S

00:08:47.125 --> 00:08:49.906 and then the 2nd way that the body

00:08:49.906 --> 00:08:51.581 regulates the Quag elation cascade

00:08:51.581 --> 00:08:54.407 is to turn on fiber analysis or the

00:08:54.407 --> 00:08:56.468 process of digesting blood clots that

00:08:56.468 --> 00:08:58.806 are formed and the principal enzyme that

00:08:58.806 --> 00:09:00.990 does this is called A2 Antiplasmin.

00:09:00.990 --> 00:09:03.066 So as you can see here,

00:09:03.070 --> 00:09:05.140 when we measured in documents anticoagulants,

00:09:05.140 --> 00:09:07.422 antithrombin protein protein S in ICU and

00:09:07.422 --> 00:09:09.638 non ICU patients with colon infection,

00:09:09.640 --> 00:09:12.408 we found that they were basically on normal.

00:09:12.410 --> 00:09:14.135 Normal is usually anything about

00:09:14.135 --> 00:09:16.260 80% and as you can see.

00:09:16.260 --> 00:09:18.486 All of these patients had essentially

00:09:18.486 --> 00:09:20.380 antis arm approaching CN Protein

00:09:20.380 --> 00:09:21.768 S levels around 100%,

00:09:21.770 --> 00:09:23.966 indicating that there was not excessive

00:09:23.966 --> 00:09:25.064 consumption of anticoagulants.

00:09:25.070 --> 00:09:27.272 Endogenous Lee and then we also

00:09:27.272 --> 00:09:28.740 looked at A2 Antiplasmin.

00:09:28.740 --> 00:09:30.204 The main fibrinolytic enzyme

00:09:30.204 --> 00:09:31.668 that I just mentioned,

00:09:31.670 --> 00:09:33.505 and again here you can

00:09:33.505 --> 00:09:35.340 see the levels in both.

NOTE Confidence: 0.88461709022522

00:09:35.340 --> 00:09:38.124 I see you in an ICU patients with

NOTE Confidence: 0.88461709022522

00:09:38.124 --> 00:09:39.750 colon infection were normal,

NOTE Confidence: 0.88461709022522

00:09:39.750 --> 00:09:41.734 so this let us know that when we

NOTE Confidence: 0.88461709022522

00:09:41.734 --> 00:09:43.475 looked at endogenous anticoagulant

NOTE Confidence: 0.88461709022522

00:09:43.475 --> 00:09:45.248 San fibrinolytic enzymes,

NOTE Confidence: 0.88461709022522

00:09:45.250 --> 00:09:47.090 we were not seeing consumption.

NOTE Confidence: 0.88461709022522

00:09:47.090 --> 00:09:48.310 Of any of these,

NOTE Confidence: 0.88461709022522

00:09:48.310 --> 00:09:49.835 and the important feature here

NOTE Confidence: 0.88461709022522

00:09:49.835 --> 00:09:51.946 is that in most patients with

NOTE Confidence: 0.88461709022522

00:09:51.946 --> 00:09:53.686 DIC you should see consumption

NOTE Confidence: 0.88461709022522

00:09:53.749 --> 00:09:55.459 of endogenous anticoagulant.

NOTE Confidence: 0.88461709022522

00:09:55.460 --> 00:09:56.510 An fibrinolytic enzymes.

NOTE Confidence: 0.88461709022522

00:09:56.510 --> 00:09:59.829 So the fact that we were not seeing that.

NOTE Confidence: 0.88461709022522

00:09:59.830 --> 00:10:03.505 Let us know that CAC is probably

NOTE Confidence: 0.88461709022522

00:10:03.505 --> 00:10:05.420 mechanistically distinct from DC.

NOTE Confidence: 0.88461709022522

00:10:05.420 --> 00:10:07.401 The next thing we did was to

NOTE Confidence: 0.88461709022522

00:10:07.401 --> 00:10:09.191 measure an enzyme called plasminogen

NOTE Confidence: 0.88461709022522

00:10:09.191 --> 00:10:11.386 activator inhibitor or Pai one.

NOTE Confidence: 0.88461709022522

00:10:11.390 --> 00:10:13.658 This is the main negative regulator

NOTE Confidence: 0.88461709022522

00:10:13.658 --> 00:10:15.881 of fiber analysis and what we

NOTE Confidence: 0.88461709022522

00:10:15.881 --> 00:10:17.795 found was that this was elevated

NOTE Confidence: 0.88461709022522

00:10:17.795 --> 00:10:20.159 both in ICU and non ICU patients.

NOTE Confidence: 0.88461709022522

00:10:20.160 --> 00:10:22.200 The significance of this is that

NOTE Confidence: 0.88461709022522

00:10:22.200 --> 00:10:24.487 whenever we see this elevated it

NOTE Confidence: 0.88461709022522

00:10:24.487 --> 00:10:26.637 sometimes will suggest that fiber

NOTE Confidence: 0.88461709022522

00:10:26.637 --> 00:10:28.800 analysis is inhibited and so it

NOTE Confidence: 0.88461709022522

00:10:28.800 --> 00:10:30.683 makes us wonder when we see this

NOTE Confidence: 0.88461709022522

00:10:30.690 --> 00:10:32.446 weather perhaps encoded associated

NOTE Confidence: 0.88461709022522

00:10:32.446 --> 00:10:35.080 Coagulopathy there may be an inhibition

NOTE Confidence: 0.88461709022522

00:10:35.143 --> 00:10:37.188 of Clock breakdown which might

NOTE Confidence: 0.88461709022522

00:10:37.188 --> 00:10:39.233 contribute to overall thrombosis risk.

00:10:39.240 --> 00:10:41.322 And then the last thing we

00:10:41.322 --> 00:10:43.820 did was at the very bottom.

00:10:43.820 --> 00:10:45.730 Here we measured three tests,

00:10:45.730 --> 00:10:46.879 von Willebrands Factor,

00:10:46.879 --> 00:10:48.794 Antigen von Willebrands factor activity

00:10:48.794 --> 00:10:50.699 and factor 8 coagulations level.

00:10:50.700 --> 00:10:53.367 So what are these fun Willebrand factor?

00:10:53.370 --> 00:10:55.315 Is a hemostatic factor that's

00:10:55.315 --> 00:10:57.260 released by endothelial cells and

00:10:57.326 --> 00:10:59.486 the purpose in coagulations of fun.

00:10:59.490 --> 00:11:01.220 Willebrand factor is basically to

00:11:01.220 --> 00:11:03.427 help platelets bind to sites of

00:11:03.427 --> 00:11:05.099 damaged endothelium and initiate

00:11:05.099 --> 00:11:06.353 primary hemostat stasis,

00:11:06.360 --> 00:11:08.270 which is important for blood

00:11:08.270 --> 00:11:09.416 clotting factor 8.

NOTE Confidence: 0.88461709022522

00:11:09.420 --> 00:11:11.778 Separately is a coagulations factor that.

NOTE Confidence: 0.88461709022522

00:11:11.780 --> 00:11:14.192 Wines to von Willebrand factor in

NOTE Confidence: 0.88461709022522

00:11:14.192 --> 00:11:16.667 the circulation and So what we

NOTE Confidence: 0.88461709022522

00:11:16.667 --> 00:11:19.037 notice when we measured levels of

NOTE Confidence: 0.88461709022522

00:11:19.037 --> 00:11:21.079 an willebrand factor in factor 8

NOTE Confidence: 0.88461709022522

00:11:21.079 --> 00:11:23.218 both in ICU and in ICU patients,

NOTE Confidence: 0.88461709022522

00:11:23.218 --> 00:11:26.162 we saw that the levels were quite high,

NOTE Confidence: 0.88461709022522

00:11:26.170 --> 00:11:28.228 and in particular the levels were

NOTE Confidence: 0.88461709022522

00:11:28.228 --> 00:11:30.230 super elevated in ICU patients,

NOTE Confidence: 0.88461709022522

00:11:30.230 --> 00:11:33.182 and I just want to show you another

NOTE Confidence: 0.88461709022522

00:11:33.182 --> 00:11:33.920 curve here.

NOTE Confidence: 0.88461709022522

00:11:33.920 --> 00:11:36.224 This right here are DOT plots

NOTE Confidence: 0.88461709022522

00:11:36.224 --> 00:11:38.165 showing Refactor Antigen one factor

NOTE Confidence: 0.88461709022522

00:11:38.165 --> 00:11:40.482 activity and factor 8 in ICU versus

NOTE Confidence: 0.88461709022522

00:11:40.482 --> 00:11:42.810 non ICU patients with the green.

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NOTE Confidence: 0.88461709022522

00:11:42.810 --> 00:11:44.062 Rose indicating what the

NOTE Confidence: 0.88461709022522

00:11:44.062 --> 00:11:45.314 normal ranges should be,

NOTE Confidence: 0.88461709022522

00:11:45.320 --> 00:11:46.890 so again based on this,

NOTE Confidence: 0.898008227348328

00:11:46.890 --> 00:11:49.266 as you can see, one will benefactor in

NOTE Confidence: 0.898008227348328

00:11:49.266 --> 00:11:51.575 factor 8 levels are elevated both in

NOTE Confidence: 0.898008227348328

00:11:51.575 --> 00:11:54.109 ICU and non ICU patients with Cove it,

NOTE Confidence: 0.898008227348328

00:11:54.110 --> 00:11:56.308 but there are through the roof high,

NOTE Confidence: 0.898008227348328

00:11:56.310 --> 00:11:57.566 particularly for von Willebrands

NOTE Confidence: 0.898008227348328

00:11:57.566 --> 00:11:59.136 factor in the ICU patients.

NOTE Confidence: 0.898008227348328

00:11:59.140 --> 00:12:01.282 The significance here is that the major

NOTE Confidence: 0.898008227348328

00:12:01.282 --> 00:12:03.820 source of on lower end factor in the

NOTE Confidence: 0.898008227348328

00:12:03.820 --> 00:12:06.064 body as it circulates through the blood

NOTE Confidence: 0.898008227348328

00:12:06.064 --> 00:12:07.936 is endothelial cells and so whenever

NOTE Confidence: 0.898008227348328

00:12:07.936 --> 00:12:09.945 we see this sort of pattern where

NOTE Confidence: 0.898008227348328

00:12:09.945 --> 00:12:12.461 we have very very high levels of fun

NOTE Confidence: 0.898008227348328

00:12:12.461 --> 00:12:14.609 willebrand factor circulating in the blood.

NOTE Confidence: 0.898008227348328

00:12:14.610 --> 00:12:16.836 It tends to point towards a

NOTE Confidence: 0.898008227348328

00:12:16.836 --> 00:12:18.320 pattern of endothelial injury.

NOTE Confidence: 0.898008227348328

00:12:18.320 --> 00:12:20.030 In addition, von Willebrands factor

NOTE Confidence: 0.898008227348328

00:12:20.030 --> 00:12:22.400 can also be stored in platelets,

NOTE Confidence: 0.898008227348328

00:12:22.400 --> 00:12:24.626 and so looking at this pattern,

NOTE Confidence: 0.898008227348328

00:12:24.630 --> 00:12:26.989 it made us wonder if perhaps both

NOTE Confidence: 0.898008227348328

00:12:26.989 --> 00:12:28.433 endothelial cells and platelets

NOTE Confidence: 0.898008227348328

00:12:28.433 --> 00:12:30.273 were being hyper activated in

NOTE Confidence: 0.898008227348328

00:12:30.273 --> 00:12:32.420 the setting of coded infection.

NOTE Confidence: 0.898008227348328

00:12:32.420 --> 00:12:34.040 Particularly as patients

NOTE Confidence: 0.898008227348328

00:12:34.040 --> 00:12:36.200 progressed to critical illness.

NOTE Confidence: 0.898008227348328

00:12:36.200 --> 00:12:38.366 So in order to test this,

NOTE Confidence: 0.898008227348328

00:12:38.370 --> 00:12:40.918 we were interested in looking at specific

NOTE Confidence: 0.898008227348328

00:12:40.918 --> 00:12:42.766 markers of endothelial function and

NOTE Confidence: 0.898008227348328

00:12:42.766 --> 00:12:44.854 platelet activation and so for this,

NOTE Confidence: 0.898008227348328

00:12:44.860 --> 00:12:46.232 we collaborated with Doctor

NOTE Confidence: 0.898008227348328

00:12:46.232 --> 00:12:47.604 Hengchun who's an investigator

NOTE Confidence: 0.898008227348328

00:12:47.604 --> 00:12:49.560 in the Cardiology Section who,

NOTE Confidence: 0.898008227348328

00:12:49.560 --> 00:12:51.360 along with his two postdocs,

NOTE Confidence: 0.898008227348328

00:12:51.360 --> 00:12:53.170 doctor home Chang and doctor,

NOTE Confidence: 0.898008227348328

00:12:53.170 --> 00:12:55.210 honey and Zhang performed a series

NOTE Confidence: 0.898008227348328

00:12:55.210 --> 00:12:57.902 of experiments on all of our ICU and

NOTE Confidence: 0.898008227348328

00:12:57.902 --> 00:12:59.798 non ICU patients looking at different

NOTE Confidence: 0.898008227348328

00:12:59.863 --> 00:13:01.515 endothelial and platelet activation

NOTE Confidence: 0.898008227348328

00:13:01.515 --> 00:13:03.993 markers and the specific ones we

NOTE Confidence: 0.898008227348328

00:13:04.000 --> 00:13:06.226 looked at were soluble key selecting.

NOTE Confidence: 0.898008227348328

00:13:06.230 --> 00:13:08.470 Which is shown up in the top left,

NOTE Confidence: 0.898008227348328

00:13:08.470 --> 00:13:10.150 which is a marker of both

NOTE Confidence: 0.898008227348328

00:13:10.150 --> 00:13:11.270 endothelial cells and platelets.

NOTE Confidence: 0.898008227348328

00:13:11.270 --> 00:13:12.670 And then we also looked

NOTE Confidence: 0.898008227348328

00:13:12.670 --> 00:13:14.070 at soluble CD 40 ligand,

NOTE Confidence: 0.898008227348328

00:13:14.070 --> 00:13:15.750 which is seen which is released

NOTE Confidence: 0.898008227348328

00:13:15.750 --> 00:13:16.870 by platelets and lymphocytes.

NOTE Confidence: 0.898008227348328

00:13:16.870 --> 00:13:18.865 And then Lastly we looked at soluble

NOTE Confidence: 0.898008227348328

00:13:18.865 --> 00:13:21.173 from a module in which is specific

NOTE Confidence: 0.898008227348328

00:13:21.173 --> 00:13:22.569 mostly to endothelial cells.

NOTE Confidence: 0.898008227348328

00:13:22.570 --> 00:13:24.325 Come here because these are

NOTE Confidence: 0.898008227348328

00:13:24.325 --> 00:13:25.378 all research tests.

NOTE Confidence: 0.898008227348328

00:13:25.380 --> 00:13:26.865 They don't have normal reference

NOTE Confidence: 0.898008227348328

00:13:26.865 --> 00:13:29.846 range is so as a result we also got

NOTE Confidence: 0.898008227348328

00:13:29.846 --> 00:13:31.636 blood from 13 different control

NOTE Confidence: 0.898008227348328

00:13:31.636 --> 00:13:33.449 patients or control individuals,

NOTE Confidence: 0.898008227348328

00:13:33.450 --> 00:13:35.205 many of whom are listening

NOTE Confidence: 0.898008227348328

00:13:35.205 --> 00:13:36.960 to this talk right now.

NOTE Confidence: 0.898008227348328

00:13:36.960 --> 00:13:39.032 So the significance of this is that

NOTE Confidence: 0.898008227348328

00:13:39.032 --> 00:13:41.436 when we looked at all these three

NOTE Confidence: 0.898008227348328

00:13:41.436 --> 00:13:43.246 different markers of endothelial cell

NOTE Confidence: 0.898008227348328

00:13:43.246 --> 00:13:45.388 plus or minus platelet activation,

NOTE Confidence: 0.898008227348328

00:13:45.390 --> 00:13:47.966 we saw in pretty much every single case

NOTE Confidence: 0.898008227348328

00:13:47.966 --> 00:13:50.527 that the levels were higher in ICU

NOTE Confidence: 0.898008227348328

00:13:50.527 --> 00:13:52.780 patients with kovid than they were.

NOTE Confidence: 0.898008227348328

00:13:52.780 --> 00:13:54.892 Then controls in the case of

NOTE Confidence: 0.898008227348328

00:13:54.892 --> 00:13:55.596 soluble thrombomodulin.

NOTE Confidence: 0.898008227348328

00:13:55.600 --> 00:13:58.048 We did not see a significant change in

NOTE Confidence: 0.898008227348328

00:13:58.048 --> 00:14:00.519 the level of soluble thermal modeling.

NOTE Confidence: 0.898008227348328

00:14:00.520 --> 00:14:01.960 ICU versus control patients.

NOTE Confidence: 0.898008227348328

00:14:01.960 --> 00:14:04.540 But what we did notice was that

NOTE Confidence: 0.898008227348328

00:14:04.540 --> 00:14:06.622 there were several patients in the

NOTE Confidence: 0.898008227348328

00:14:06.622 --> 00:14:09.405 ICU group who had a quite high level

NOTE Confidence: 0.898008227348328

00:14:09.405 --> 00:14:11.422 of soluble thermal module in that

NOTE Confidence: 0.898008227348328

00:14:11.422 --> 00:14:13.474 made us think that perhaps there

NOTE Confidence: 0.898008227348328

00:14:13.474 --> 00:14:15.806 was something going on with soluble

NOTE Confidence: 0.898008227348328

00:14:15.806 --> 00:14:17.462 thermal modeling and therefore

NOTE Confidence: 0.898008227348328

00:14:17.462 --> 00:14:19.448 endothelial cells that might be

NOTE Confidence: 0.898008227348328

00:14:19.448 --> 00:14:20.808 specific to ICU patients.

NOTE Confidence: 0.898008227348328

00:14:20.810 --> 00:14:23.026 And so when we did a series of

NOTE Confidence: 0.898008227348328

00:14:23.026 --> 00:14:25.274 tests looking at all these different

NOTE Confidence: 0.898008227348328

00:14:25.274 --> 00:14:27.304 markers and comparing to mortality,

NOTE Confidence: 0.898008227348328

00:14:27.310 --> 00:14:29.272 we found that interesting Lee soluble

NOTE Confidence: 0.898008227348328

00:14:29.272 --> 00:14:30.253 thrombomodulin level segregated

NOTE Confidence: 0.898008227348328

00:14:30.253 --> 00:14:31.070 with mortality.

NOTE Confidence: 0.898008227348328

00:14:31.070 --> 00:14:33.692 Whether we looked at the entire

NOTE Confidence: 0.898008227348328

00:14:33.692 --> 00:14:35.933 population in our cohort or

NOTE Confidence: 0.898008227348328

00:14:35.933 --> 00:14:38.405 whether we looked at ICU patients.

NOTE Confidence: 0.898008227348328

00:14:38.410 --> 00:14:40.380 Alright, so putting this altogether,

NOTE Confidence: 0.898008227348328

00:14:40.380 --> 00:14:43.524 what did we learn from from these studies?

NOTE Confidence: 0.865365564823151

00:14:43.530 --> 00:14:45.090 First in measuring different

NOTE Confidence: 0.865365564823151

00:14:45.090 --> 00:14:46.650 levels of endogenous anticoagulant

NOTE Confidence: 0.865365564823151

00:14:46.650 --> 00:14:47.870 sand fibrinolytic enzymes,

NOTE Confidence: 0.865365564823151

00:14:47.870 --> 00:14:49.982 we found that antithrombin protein to

NOTE Confidence: 0.865365564823151

00:14:49.982 --> 00:14:52.755 protein S and A2 anti plasm overall

NOTE Confidence: 0.865365564823151

00:14:52.755 --> 00:14:55.341 preserved which is distinct from DIC

NOTE Confidence: 0.865365564823151

00:14:55.341 --> 00:14:57.377 indicating that indeed code associated

NOTE Confidence: 0.865365564823151

00:14:57.377 --> 00:15:00.083 Coagulopathy is not the same as DIC.

NOTE Confidence: 0.865365564823151

00:15:00.083 --> 00:15:03.227 We also learned that Pai one is elevated,

NOTE Confidence: 0.865365564823151

00:15:03.230 --> 00:15:04.806 encoded associated Coagulopathy suggesting

NOTE Confidence: 0.865365564823151

00:15:04.806 --> 00:15:07.170 that fiber analysis might be inhibited.

NOTE Confidence: 0.865365564823151

00:15:07.170 --> 00:15:08.580 Although we haven't

NOTE Confidence: 0.865365564823151

00:15:08.580 --> 00:15:09.990 completely confirmed that.

NOTE Confidence: 0.865365564823151

00:15:09.990 --> 00:15:10.690 In addition,

NOTE Confidence: 0.865365564823151

00:15:10.690 --> 00:15:12.790 we saw that on Willebrand factor,

NOTE Confidence: 0.865365564823151

00:15:12.790 --> 00:15:14.890 in factory levels, which are markers,

NOTE Confidence: 0.865365564823151

00:15:14.890 --> 00:15:16.640 particularly endothelial cells and platelets,

NOTE Confidence: 0.865365564823151

00:15:16.640 --> 00:15:18.390 are elevated in both non

NOTE Confidence: 0.865365564823151

00:15:18.390 --> 00:15:19.790 ICU and ICU patients,

NOTE Confidence: 0.865365564823151

00:15:19.790 --> 00:15:21.390 and in particular are through

NOTE Confidence: 0.865365564823151

00:15:21.390 --> 00:15:23.640 the roof high in ICU patients,

NOTE Confidence: 0.865365564823151

00:15:23.640 --> 00:15:25.482 suggesting that there is a significant

NOTE Confidence: 0.865365564823151

00:15:25.482 --> 00:15:27.588 component of any Philly Opathy and

NOTE Confidence: 0.865365564823151

00:15:27.588 --> 00:15:29.240 platelet activation encoding infection,

NOTE Confidence: 0.865365564823151

00:15:29.240 --> 00:15:30.584 particularly as patients

NOTE Confidence: 0.865365564823151

00:15:30.584 --> 00:15:31.928 become critically ill.

NOTE Confidence: 0.865365564823151

00:15:31.930 --> 00:15:32.833 And then Lastly,

NOTE Confidence: 0.865365564823151

00:15:32.833 --> 00:15:34.639 we saw that when we measured

NOTE Confidence: 0.865365564823151

00:15:34.639 --> 00:15:36.241 specific markers of endothelial

NOTE Confidence: 0.865365564823151

00:15:36.241 --> 00:15:37.897 cell and platelet activation,

NOTE Confidence: 0.865365564823151

00:15:37.900 --> 00:15:40.228 we found that these were elevated in ICU

NOTE Confidence: 0.865365564823151

00:15:40.228 --> 00:15:42.109 patients with soluble thrombomodulin,

NOTE Confidence: 0.865365564823151

00:15:42.110 --> 00:15:44.900 which is quite specific for endothelial

NOTE Confidence: 0.865365564823151

00:15:44.900 --> 00:15:46.760 function segregating with mortality.

NOTE Confidence: 0.865365564823151

00:15:46.760 --> 00:15:47.684 So In conclusion,

NOTE Confidence: 0.865365564823151

00:15:47.684 --> 00:15:49.840 what we believe our data shows is

NOTE Confidence: 0.865365564823151

00:15:49.904 --> 00:15:51.929 that code associated Coagulopathy is

NOTE Confidence: 0.865365564823151

00:15:51.929 --> 00:15:54.463 actually an Endo Philly Opathy where

NOTE Confidence: 0.865365564823151

00:15:54.463 --> 00:15:56.698 you see augmented von Willebrands

NOTE Confidence: 0.865365564823151

00:15:56.698 --> 00:15:58.857 factor release platelet activation an

NOTE Confidence: 0.865365564823151

00:15:58.857 --> 00:16:00.325 hypercoagulability all coming together

NOTE Confidence: 0.865365564823151

00:16:00.325 --> 00:16:02.790 causing an increased risk of thrombosis,

NOTE Confidence: 0.865365564823151

00:16:02.790 --> 00:16:03.963 including Venus thromboembolism,

NOTE Confidence: 0.865365564823151

00:16:03.963 --> 00:16:05.527 Artur thrombosis and also

NOTE Confidence: 0.865365564823151

00:16:05.527 --> 00:16:06.309 microvascular thrombus.

NOTE Confidence: 0.865365564823151

00:16:06.310 --> 00:16:07.084 In addition,

NOTE Confidence: 0.865365564823151

00:16:07.084 --> 00:16:08.632 we think that endothelial

NOTE Confidence: 0.865365564823151

00:16:08.632 --> 00:16:11.025 dysfunction or injury is a marker

NOTE Confidence: 0.865365564823151

00:16:11.025 --> 00:16:12.960 of progression of critical illness,

NOTE Confidence: 0.865365564823151

00:16:12.960 --> 00:16:15.102 encoded 19 infection and we find

NOTE Confidence: 0.865365564823151

00:16:15.102 --> 00:16:17.498 that soluble from a modeling as

NOTE Confidence: 0.865365564823151

00:16:17.498 --> 00:16:19.286 a specific endothelial marker

NOTE Confidence: 0.865365564823151

00:16:19.286 --> 00:16:21.830 seems to segregate with mortality.

NOTE Confidence: 0.865365564823151

00:16:21.830 --> 00:16:22.124 Um,

NOTE Confidence: 0.865365564823151

00:16:22.124 --> 00:16:24.476 the importance of all of this is that

NOTE Confidence: 0.865365564823151

00:16:24.476 --> 00:16:26.479 it's made us wonder if there might

NOTE Confidence: 0.865365564823151

00:16:26.479 --> 00:16:28.530 be a role for adding antiplatelet

NOTE Confidence: 0.865365564823151

00:16:28.530 --> 00:16:30.735 or even endothelial cell modifying

NOTE Confidence: 0.865365564823151

00:16:30.735 --> 00:16:32.752 therapy to our anticoagulation algorithm.

NOTE Confidence: 0.865365564823151

00:16:32.752 --> 00:16:35.174 And so early on while we were

NOTE Confidence: 0.865365564823151

00:16:35.174 --> 00:16:36.149 developing this story,

NOTE Confidence: 0.865365564823151

00:16:36.150 --> 00:16:39.219 we met with a number of the ICU directores,

NOTE Confidence: 0.865365564823151

00:16:39.220 --> 00:16:41.278 FDA only Haven Hospital Ann through

33

NOTE Confidence: 0.865365564823151

00:16:41.278 --> 00:16:43.628 a lot of discussion just I think

NOTE Confidence: 0.865365564823151

00:16:43.628 --> 00:16:45.763 last week or the week before aspirin

NOTE Confidence: 0.865365564823151

00:16:45.832 --> 00:16:47.998 was finally added to our treatment

NOTE Confidence: 0.865365564823151

00:16:47.998 --> 00:16:49.791 algorithm and now every patient

NOTE Confidence: 0.865365564823151

00:16:49.791 --> 00:16:51.837 who gets admitted to the hospital.

NOTE Confidence: 0.865365564823151

00:16:51.840 --> 00:16:53.880 In the ICU with colon infection,

NOTE Confidence: 0.865365564823151

00:16:53.880 --> 00:16:55.580 get started on aspirin empirically.

NOTE Confidence: 0.889760613441467

00:16:57.980 --> 00:17:00.374 So I just want to acknowledge a lot of

NOTE Confidence: 0.889760613441467

00:17:00.374 --> 00:17:02.418 people who contributed to this work.

NOTE Confidence: 0.889760613441467

00:17:02.420 --> 00:17:03.604 We have this gigantic,

NOTE Confidence: 0.889760613441467

00:17:03.604 --> 00:17:04.788 an amazing hematology team,

NOTE Confidence: 0.889760613441467

00:17:04.790 --> 00:17:06.270 both on the research side.

NOTE Confidence: 0.889760613441467

00:17:06.270 --> 00:17:07.318 In the clinical side,

NOTE Confidence: 0.889760613441467

00:17:07.318 --> 00:17:09.296 on the left are all the trainees

NOTE Confidence: 0.889760613441467

00:17:09.296 --> 00:17:10.996 who are working with this.

NOTE Confidence: 0.889760613441467

00:17:11.000 --> 00:17:12.960 George and Alex are start fellows in

NOTE Confidence: 0.889760613441467

00:17:12.960 --> 00:17:14.848 a particular alot of our discussions.

NOTE Confidence: 0.889760613441467

00:17:14.850 --> 00:17:16.722 In fact pretty much every experiment

NOTE Confidence: 0.889760613441467

00:17:16.722 --> 00:17:18.637 that we've done really started with

NOTE Confidence: 0.889760613441467

00:17:18.637 --> 00:17:20.779 conversations at George and I had many

NOTE Confidence: 0.889760613441467

00:17:20.779 --> 00:17:22.834 months ago leading to what we have now.

NOTE Confidence: 0.889760613441467

00:17:22.840 --> 00:17:24.616 Matt, my salati as I mentioned,

NOTE Confidence: 0.889760613441467

00:17:24.620 --> 00:17:26.489 is a superb PhD student Eric Chang

NOTE Confidence: 0.889760613441467

00:17:26.489 --> 00:17:28.947 and Yu Shen Lu are both third year

NOTE Confidence: 0.889760613441467

00:17:28.947 --> 00:17:30.904 senior medical residents who are going

NOTE Confidence: 0.889760613441467

00:17:30.904 --> 00:17:32.983 to be our fellows this coming July.

NOTE Confidence: 0.889760613441467

00:17:32.990 --> 00:17:35.251 And then Rebecca fine is an intern

NOTE Confidence: 0.889760613441467

00:17:35.251 --> 00:17:37.782 who expressed some interest in doing

NOTE Confidence: 0.889760613441467

00:17:37.782 --> 00:17:39.276 immunology Hematology Research.

NOTE Confidence: 0.889760613441467

00:17:39.280 --> 00:17:41.744 Down at the bottom are the members of

NOTE Confidence: 0.889760613441467

00:17:41.744 --> 00:17:43.751 Doctor Chung's lab who contributed this

NOTE Confidence: 0.8897760613441467

00:17:43.751 --> 00:17:46.126 worth hung Chang and honey Jang where

NOTE Confidence: 0.8897760613441467

00:17:46.126 --> 00:17:48.702 both postdocs as I mentioned in the middle.

NOTE Confidence: 0.8897760613441467

00:17:48.710 --> 00:17:50.660 We have a number of pharmacists,

NOTE Confidence: 0.8897760613441467

00:17:50.660 --> 00:17:52.473 some of them are familiar to you

NOTE Confidence: 0.8897760613441467

00:17:52.473 --> 00:17:55.263 guys who are part of our greater team

NOTE Confidence: 0.8897760613441467

00:17:55.263 --> 00:17:56.823 looking at anticoagulation outcomes.

NOTE Confidence: 0.8897760613441467

00:17:56.830 --> 00:17:58.130 Cajun mean Nick Difilippo,

NOTE Confidence: 0.8897760613441467

00:17:58.130 --> 00:18:00.091 Dana McManus, Cantou Enedina frozen.

NOTE Confidence: 0.8897760613441467

00:18:00.091 --> 00:18:03.150 Uhm and then over on the right.

NOTE Confidence: 0.8897760613441467

00:18:03.150 --> 00:18:05.572 Here we have our amazing, outpatient,

NOTE Confidence: 0.8897760613441467

00:18:05.572 --> 00:18:07.180 benign hematology clinical team.

NOTE Confidence: 0.8897760613441467

00:18:07.180 --> 00:18:08.713 Audrey Gina, Andrea,

NOTE Confidence: 0.8897760613441467

00:18:08.713 --> 00:18:10.757 Joy, Ann and hope.

NOTE Confidence: 0.8897760613441467

00:18:10.760 --> 00:18:12.080 Uhm, and then finally the bottom.

NOTE Confidence: 0.8897760613441467

00:18:12.080 --> 00:18:13.620 I just want to acknowledge Bob Bono,

NOTE Confidence: 0.8897760613441467

00:18:13.620 --> 00:18:14.838 who's our new chief of benign

NOTE Confidence: 0.889760613441467

00:18:14.838 --> 00:18:16.040 team and then Stephanie Helene's,

NOTE Confidence: 0.889760613441467

00:18:16.040 --> 00:18:18.371 our section chief as both of them have been

NOTE Confidence: 0.889760613441467

00:18:18.371 --> 00:18:20.028 incredibly supportive of these efforts.

NOTE Confidence: 0.889760613441467

00:18:20.030 --> 00:18:22.690 So thank you guys and thank you

NOTE Confidence: 0.910585716366768

00:18:22.690 --> 00:18:24.585 Charlie. Thank you and congratulations

NOTE Confidence: 0.910585716366768

00:18:24.585 --> 00:18:26.924 to you and really the entire

NOTE Confidence: 0.910585716366768

00:18:26.924 --> 00:18:28.819 team on working through this.

NOTE Confidence: 0.910585716366768

00:18:28.820 --> 00:18:31.516 Uh, in a very short amount of time

NOTE Confidence: 0.910585716366768

00:18:31.516 --> 00:18:33.543 and frankly making a difference

NOTE Confidence: 0.910585716366768

00:18:33.543 --> 00:18:36.087 for our patients in the process.

NOTE Confidence: 0.910585716366768

00:18:36.090 --> 00:18:38.388 and I know we have some

NOTE Confidence: 0.910585716366768

00:18:38.388 --> 00:18:39.537 questions coming through,

NOTE Confidence: 0.910585716366768

00:18:39.540 --> 00:18:42.214 but let me start by asking you.

NOTE Confidence: 0.910585716366768

00:18:42.220 --> 00:18:44.482 Your research seems certainly indicates that

NOTE Confidence: 0.910585716366768

00:18:44.482 --> 00:18:47.577 this is a process of interfere with damage.

00:18:47.580 --> 00:18:50.523 And do we? What do we know about the

00:18:50.523 --> 00:18:53.348 virus itself that lends support that?

00:18:53.350 --> 00:18:55.954 This would be a primary incident

00:18:55.954 --> 00:18:57.256 to the endothelium.

00:18:57.830 --> 00:18:59.780 Yeah, that's a great question,

00:18:59.780 --> 00:19:03.272 so there does seem to be in autopsy studies.

00:19:03.280 --> 00:19:05.608 A certain component of endothelial leitis,

00:19:05.610 --> 00:19:08.102 which some people have shown might be

00:19:08.102 --> 00:19:10.280 related to direct viral infection.

00:19:10.280 --> 00:19:12.356 So there have been autopsy studies

00:19:12.356 --> 00:19:13.740 that have demonstrated viral

00:19:13.797 --> 00:19:15.717 particles within endothelial cells.

00:19:15.720 --> 00:19:18.060 Not every study has demonstrated that,

00:19:18.060 --> 00:19:20.780 but some people do believe that that is

00:19:20.780 --> 00:19:23.682 part of the incipient process that begins

00:19:23.682 --> 00:19:26.619 the end of filial pattern of injury.

NOTE Confidence: 0.912236750125885

00:19:26.620 --> 00:19:28.960 One of the challenges is that.

NOTE Confidence: 0.912236750125885

00:19:28.960 --> 00:19:30.710 A lot of people tend to think

NOTE Confidence: 0.912236750125885

00:19:30.710 --> 00:19:32.410 of thrombosis as somewhat later

NOTE Confidence: 0.912236750125885

00:19:32.410 --> 00:19:33.748 event occuring clinically,

NOTE Confidence: 0.912236750125885

00:19:33.750 --> 00:19:36.603 so it's not clear if there may be a

NOTE Confidence: 0.912236750125885

00:19:36.603 --> 00:19:39.486 second sort of hit to the end of Filium,

NOTE Confidence: 0.912236750125885

00:19:39.490 --> 00:19:39.800 particularly,

NOTE Confidence: 0.912236750125885

00:19:39.800 --> 00:19:41.350 patients become critically ill that

NOTE Confidence: 0.912236750125885

00:19:41.350 --> 00:19:43.319 might be independent of viral infection.

NOTE Confidence: 0.912236750125885

00:19:43.320 --> 00:19:44.980 It might instead involve inflammation

NOTE Confidence: 0.912236750125885

00:19:44.980 --> 00:19:46.988 and other things like compliment that

NOTE Confidence: 0.912236750125885

00:19:46.988 --> 00:19:48.740 might trigger and a filial activation.

NOTE Confidence: 0.91236799955368

00:19:50.150 --> 00:19:51.778 Thank you other questions

NOTE Confidence: 0.91236799955368

00:19:51.778 --> 00:19:53.406 that have come through.

NOTE Confidence: 0.91236799955368

00:19:53.410 --> 00:19:55.570 Do you have any information about

NOTE Confidence: 0.91236799955368

00:19:55.570 --> 00:19:57.528 the specificity of these changes

NOTE Confidence: 0.91236799955368

00:19:57.528 --> 00:19:59.803 for chobit relative to other

NOTE Confidence: 0.91236799955368

00:19:59.803 --> 00:20:01.168 respiratory viral infections?

NOTE Confidence: 0.91236799955368

00:20:01.170 --> 00:20:02.945 For instance, are microvascular thrombi

NOTE Confidence: 0.91236799955368

00:20:02.945 --> 00:20:05.285 a finding in in other respiratory

NOTE Confidence: 0.91236799955368

00:20:05.285 --> 00:20:07.289 viral infections beyond coated?

NOTE Confidence: 0.91236799955368

00:20:07.290 --> 00:20:08.100 Yeah, that's

NOTE Confidence: 0.91236799955368

00:20:08.100 --> 00:20:11.084 a good question to my knowledge I I'm

NOTE Confidence: 0.91236799955368

00:20:11.084 --> 00:20:14.573 not aware of a lot of other viruses

NOTE Confidence: 0.91236799955368

00:20:14.573 --> 00:20:16.670 that show microvascular thrown by.

NOTE Confidence: 0.91236799955368

00:20:16.670 --> 00:20:18.986 There are certain cases of influenza

NOTE Confidence: 0.91236799955368

00:20:18.986 --> 00:20:21.129 that can be characterized by

NOTE Confidence: 0.91236799955368

00:20:21.129 --> 00:20:22.719 massive inflammatory responses.

NOTE Confidence: 0.91236799955368

00:20:22.720 --> 00:20:24.616 Um dangi infection is also often

NOTE Confidence: 0.91236799955368

00:20:24.616 --> 00:20:26.874 brought up as an example of a

NOTE Confidence: 0.91236799955368

00:20:26.874 --> 00:20:28.728 virus that can cause a pretty

NOTE Confidence: 0.91236799955368

00:20:28.728 --> 00:20:30.530 awful coagulopathic picture,

NOTE Confidence: 0.91236799955368

00:20:30.530 --> 00:20:33.160 so I'm not sure if any of either of those

NOTE Confidence: 0.91236799955368

00:20:33.227 --> 00:20:35.857 in particular are classically associated.

NOTE Confidence: 0.91236799955368

00:20:35.860 --> 00:20:37.630 Microvascular phone by or not,

NOTE Confidence: 0.91236799955368

00:20:37.630 --> 00:20:40.045 but I'm not aware of a lot

NOTE Confidence: 0.91236799955368

00:20:40.045 --> 00:20:41.889 of other viruses that are.

NOTE Confidence: 0.86891633272171

00:20:43.320 --> 00:20:45.966 And then another question do that?

NOTE Confidence: 0.86891633272171

00:20:45.970 --> 00:20:48.090 Does the Coagulopathy correlate

NOTE Confidence: 0.86891633272171

00:20:48.090 --> 00:20:51.180 with the static on storm? Yeah,

NOTE Confidence: 0.876762747764587

00:20:51.180 --> 00:20:53.826 so that's a great question Stewart.

NOTE Confidence: 0.876762747764587

00:20:53.830 --> 00:20:56.338 So one of the interesting experiments

NOTE Confidence: 0.876762747764587

00:20:56.338 --> 00:20:58.836 that that Young Chun started to

NOTE Confidence: 0.876762747764587

00:20:58.836 --> 00:21:01.461 do with our patient samples is to

NOTE Confidence: 0.876762747764587

00:21:01.461 --> 00:21:03.999 examine different proteomic profiles,

NOTE Confidence: 0.876762747764587

00:21:04.000 --> 00:21:06.210 and so we're starting to

NOTE Confidence: 0.876762747764587

00:21:06.210 --> 00:21:08.420 get that data back now,

NOTE Confidence: 0.876762747764587

00:21:08.420 --> 00:21:11.507 and the hope is to see mechanistically,

NOTE Confidence: 0.876762747764587

00:21:11.510 --> 00:21:14.582 if any of the changes inside a current

NOTE Confidence: 0.876762747764587

00:21:14.582 --> 00:21:17.645 profiles that that are shown do correlate

NOTE Confidence: 0.876762747764587

00:21:17.645 --> 00:21:20.830 with robotic risk or endothelial dysfunction.

NOTE Confidence: 0.876762747764587

00:21:20.830 --> 00:21:23.196 One of the challenges we have in

NOTE Confidence: 0.876762747764587

00:21:23.196 --> 00:21:25.097 trying to interpret our data fully

NOTE Confidence: 0.876762747764587

00:21:25.097 --> 00:21:27.400 is that as most of you guys know,

NOTE Confidence: 0.876762747764587

00:21:27.400 --> 00:21:29.290 pretty much every critically ill patient

NOTE Confidence: 0.876762747764587

00:21:29.290 --> 00:21:31.216 in the hospital with kovid receives

NOTE Confidence: 0.876762747764587

00:21:31.216 --> 00:21:33.344 totalism AB before they reach the ICU,

NOTE Confidence: 0.876762747764587

00:21:33.350 --> 00:21:35.534 which is an interleukin six receptor blocker,

NOTE Confidence: 0.876762747764587

00:21:35.540 --> 00:21:37.780 and so there may be some effects of

NOTE Confidence: 0.876762747764587

00:21:37.780 --> 00:21:39.763 Totalism app not only on Coagulopathy

NOTE Confidence: 0.876762747764587

00:21:39.763 --> 00:21:41.797 but also on the sideline profile,

NOTE Confidence: 0.876762747764587

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00:21:41.800 --> 00:21:43.642 and so we're trying to figure

NOTE Confidence: 0.876762747764587

00:21:43.642 --> 00:21:45.240 out how to interpret that.

NOTE Confidence: 0.879934728145599

00:21:46.610 --> 00:21:49.186 Another question for patients on on a

NOTE Confidence: 0.879934728145599

00:21:49.186 --> 00:21:51.378 ventilator for other causes of a RDS,

NOTE Confidence: 0.879934728145599

00:21:51.380 --> 00:21:53.085 do they have elevated levels

NOTE Confidence: 0.879934728145599

00:21:53.085 --> 00:21:54.790 of one willebrand factor? Yeah,

NOTE Confidence: 0.879934728145599

00:21:54.790 --> 00:21:56.500 even that's a fantastic question,

NOTE Confidence: 0.879934728145599

00:21:56.500 --> 00:21:59.232 and so the answer is yes, sort of,

NOTE Confidence: 0.879934728145599

00:21:59.232 --> 00:22:01.960 but not not quite to the same level.

NOTE Confidence: 0.879934728145599

00:22:01.960 --> 00:22:05.020 So in the literature there's a lot of other.

NOTE Confidence: 0.879934728145599

00:22:05.020 --> 00:22:07.732 There's a few other diseases that are known

NOTE Confidence: 0.879934728145599

00:22:07.732 --> 00:22:10.480 to have very bad end of Philly Opathy,

NOTE Confidence: 0.879934728145599

00:22:10.480 --> 00:22:12.502 one of them being severe DIC

NOTE Confidence: 0.879934728145599

00:22:12.502 --> 00:22:14.932 with septic shock and VOD or SOS

NOTE Confidence: 0.879934728145599

00:22:14.932 --> 00:22:16.617 in transplant is another one.

NOTE Confidence: 0.879934728145599

00:22:16.620 --> 00:22:18.668 Um, and in fact a RDS is known

NOTE Confidence: 0.879934728145599

00:22:18.668 --> 00:22:20.893 to also be characterized by NFL

NOTE Confidence: 0.879934728145599

00:22:20.893 --> 00:22:23.359 dysfunction as somewhat of a control.

NOTE Confidence: 0.879934728145599

00:22:23.360 --> 00:22:25.887 We separately worked with the ICU to

NOTE Confidence: 0.879934728145599

00:22:25.887 --> 00:22:27.672 measure von Willebrand factor levels

NOTE Confidence: 0.879934728145599

00:22:27.672 --> 00:22:30.216 in non kovid ICU patients who are into

NOTE Confidence: 0.879934728145599

00:22:30.284 --> 00:22:32.510 baited and in those patients we did

NOTE Confidence: 0.879934728145599

00:22:32.510 --> 00:22:34.210 see elevated von Willebrands levels,

NOTE Confidence: 0.879934728145599

00:22:34.210 --> 00:22:36.800 but we did not see a consistently

NOTE Confidence: 0.879934728145599

00:22:36.800 --> 00:22:38.773 super high level of unrelated factor

NOTE Confidence: 0.879934728145599

00:22:38.773 --> 00:22:41.657 like we do in code and so we do

NOTE Confidence: 0.879934728145599

00:22:41.657 --> 00:22:43.257 think there's some specificity to

NOTE Confidence: 0.879934728145599

00:22:43.257 --> 00:22:44.928 this particular Cove in response.

NOTE Confidence: 0.864825069904327

00:22:45.660 --> 00:22:48.198 Makes sense since the last question

NOTE Confidence: 0.864825069904327

00:22:48.198 --> 00:22:50.955 from Stuart is you compared ICU

NOTE Confidence: 0.864825069904327

00:22:50.955 --> 00:22:53.415 versus non ICU versus controls?

NOTE Confidence: 0.864825069904327

00:22:53.420 --> 00:22:55.676 What about these values in comparing

NOTE Confidence: 0.864825069904327

00:22:55.676 --> 00:22:57.180 patients with thrombotic complications?

NOTE Confidence: 0.864825069904327

00:22:57.180 --> 00:22:58.680 For those without cloths,

NOTE Confidence: 0.903968393802643

00:22:58.680 --> 00:23:00.936 yes Sir, that's a fantastic question.

NOTE Confidence: 0.903968393802643

00:23:00.940 --> 00:23:03.022 You know, one of the challenges

NOTE Confidence: 0.903968393802643

00:23:03.022 --> 00:23:05.449 that we have at our hospital,

NOTE Confidence: 0.903968393802643

00:23:05.450 --> 00:23:08.075 and this is not unique to us,

NOTE Confidence: 0.903968393802643

00:23:08.080 --> 00:23:10.204 is that because of concerns about

NOTE Confidence: 0.903968393802643

00:23:10.204 --> 00:23:12.220 excess health care worker exposure,

NOTE Confidence: 0.903968393802643

00:23:12.220 --> 00:23:14.095 it's not been routine for

NOTE Confidence: 0.903968393802643

00:23:14.095 --> 00:23:15.595 covert patients at Yale.

NOTE Confidence: 0.903968393802643

00:23:15.600 --> 00:23:17.480 New Haven Hospital to get

NOTE Confidence: 0.903968393802643

00:23:17.480 --> 00:23:18.984 imaging to confirm thrombosis.

NOTE Confidence: 0.903968393802643

00:23:18.990 --> 00:23:21.622 If you guys recall in the Cove

NOTE Confidence: 0.903968393802643

00:23:21.622 --> 00:23:22.750 at anticoagulation algorithm,

NOTE Confidence: 0.903968393802643

00:23:22.750 --> 00:23:23.476 we said anybody.

NOTE Confidence: 0.903968393802643

00:23:23.476 --> 00:23:25.612 Any patient in whom one suspects a Venus

NOTE Confidence: 0.903968393802643

00:23:25.612 --> 00:23:27.562 Roman Bolic event should automatically

NOTE Confidence: 0.903968393802643

00:23:27.562 --> 00:23:28.732 start photos anticoagulation.

NOTE Confidence: 0.903968393802643

00:23:28.740 --> 00:23:30.780 The reason we added that in there is

NOTE Confidence: 0.903968393802643

00:23:30.780 --> 00:23:32.591 because most patients are not getting

NOTE Confidence: 0.903968393802643

00:23:32.591 --> 00:23:34.463 imaging to tell whether they really

NOTE Confidence: 0.903968393802643

00:23:34.520 --> 00:23:36.290 have a Venus thromboembolic event.

NOTE Confidence: 0.903968393802643

00:23:36.290 --> 00:23:37.832 Therefore we don't really have a

NOTE Confidence: 0.903968393802643

00:23:37.832 --> 00:23:39.777 good idea of how many patients in

NOTE Confidence: 0.903968393802643

00:23:39.777 --> 00:23:41.505 our own hospital system and which

NOTE Confidence: 0.903968393802643

00:23:41.505 --> 00:23:43.270 ones actually have a thrombotic

NOTE Confidence: 0.903968393802643

00:23:43.270 --> 00:23:45.045 complication and which ones don't,

NOTE Confidence: 0.903968393802643

00:23:45.050 --> 00:23:48.344 so I can't answer that based on our data.