WEBVTT

NOTE duration:"00:19:21"

NOTE recognizability:0.886

NOTE language:en-us

NOTE Confidence: 0.840786202222222

00:00:02.960 --> 00:00:03.572 Hello everyone.

NOTE Confidence: 0.840786202222222

00:00:03.572 --> 00:00:06.360 My name is Sonia and I'm a P GY3

NOTE Confidence: 0.840786202222222

00:00:06.360 --> 00:00:08.280 Internal Medicine resident here at Yale.

NOTE Confidence: 0.840786202222222

00:00:08.280 --> 00:00:10.624 This is the Yale 20 video on acute

NOTE Confidence: 0.840786202222222

00:00:10.624 --> 00:00:12.119 coronary syndrome and chest pain.

NOTE Confidence: 0.840786202222222

00:00:12.120 --> 00:00:13.542 I developed this video with the

NOTE Confidence: 0.840786202222222

00:00:13.542 --> 00:00:14.800 help of Doctor Lawrence Young,

NOTE Confidence: 0.840786202222222

00:00:14.800 --> 00:00:17.638 who's a professor here in Cardiology.

NOTE Confidence: 0.840786202222222

00:00:17.640 --> 00:00:18.960 Here's a quick outline on

NOTE Confidence: 0.840786202222222

00:00:18.960 --> 00:00:20.280 what we're going to cover.

NOTE Confidence: 0.840786202222222

00:00:20.280 --> 00:00:22.128 First, we can talk about the

NOTE Confidence: 0.840786202222222

00:00:22.128 --> 00:00:23.052 anatomy and pathophysiology

NOTE Confidence: 0.840786202222222

00:00:23.052 --> 00:00:24.719 of acute coronary syndromes.

NOTE Confidence: 0.840786202222222

00:00:24.720 --> 00:00:27.079 Go through a 5 minute bedside assessment,

NOTE Confidence: 0.840786202222222

00:00:27.080 --> 00:00:28.598 touch on the diagnosis and work

NOTE Confidence: 0.840786202222222

00:00:28.598 --> 00:00:30.240 up as well as treatment.

NOTE Confidence: 0.840786202222222

00:00:30.240 --> 00:00:32.288 Learn how to write up the assessment and

NOTE Confidence: 0.840786202222222

00:00:32.288 --> 00:00:34.398 plan in your note and then summarize.

NOTE Confidence: 0.840786202222222

00:00:34.400 --> 00:00:35.279 Take home points.

NOTE Confidence: 0.943290933333333

00:00:37.520 --> 00:00:39.956 Let's briefly review our coronary anatomy.

NOTE Confidence: 0.943290933333333

00:00:39.960 --> 00:00:41.860 The left and right coronary

NOTE Confidence: 0.943290933333333

00:00:41.860 --> 00:00:44.280 arteries come off of the aorta.

NOTE Confidence: 0.943290933333333

00:00:44.280 --> 00:00:45.757 On the left side we have the

NOTE Confidence: 0.943290933333333

00:00:45.757 --> 00:00:46.760 left main coronary artery,

NOTE Confidence: 0.943290933333333

00:00:46.760 --> 00:00:48.968 which then branches into the left

NOTE Confidence: 0.943290933333333

00:00:48.968 --> 00:00:51.511 anterior descending or the LED and the

NOTE Confidence: 0.943290933333333

00:00:51.511 --> 00:00:53.515 left circumflex artery or the Cirque.

NOTE Confidence: 0.943290933333333

00:00:53.520 --> 00:00:55.734 The LED comes down the intraventricular

NOTE Confidence: 0.943290933333333

00:00:55.734 --> 00:00:58.305 septum and gives off multiple diagonal

NOTE Confidence: 0.943290933333333

00:00:58.305 --> 00:01:00.357 and septal perforating branches,

NOTE Confidence: 0.943290933333333

00:01:00.360 --> 00:01:02.760 which together supply the left atrium,

NOTE Confidence: 0.943290933333333

00:01:02.760 --> 00:01:04.680 left ventricle and the

NOTE Confidence: 0.943290933333333

00:01:04.680 --> 00:01:05.640 intraventricular septum.

NOTE Confidence: 0.943290933333333

00:01:05.640 --> 00:01:08.105 The circumflex wraps posterior laterally

NOTE Confidence: 0.943290933333333

00:01:08.105 --> 00:01:10.570 and gives off marginal branches

NOTE Confidence: 0.943290933333333

00:01:10.642 --> 00:01:13.036 which supply the apex of the heart.

NOTE Confidence: 0.943290933333333

00:01:13.040 --> 00:01:14.016 On the right side,

NOTE Confidence: 0.943290933333333

00:01:14.016 --> 00:01:15.480 we have the right coronary artery,

NOTE Confidence: 0.943290933333333

00:01:15.480 --> 00:01:17.748 which gives off many important branches

NOTE Confidence: 0.943290933333333

00:01:17.748 --> 00:01:20.805 including the SA nodal and the AB nodal

NOTE Confidence: 0.943290933333333

00:01:20.805 --> 00:01:23.031 branches which supply the conduction system.

NOTE Confidence: 0.943290933333333

00:01:23.040 --> 00:01:24.748 It also provides atrial,

NOTE Confidence: 0.943290933333333

00:01:24.748 --> 00:01:26.456 ventricular and marginal branches

NOTE Confidence: 0.943290933333333

00:01:26.456 --> 00:01:28.319 to supply the right side.

NOTE Confidence: 0.943290933333333

00:01:28.320 --> 00:01:29.436 90% of the time,

NOTE Confidence: 0.943290933333333

00:01:29.436 --> 00:01:31.110 the right coronary artery will end

NOTE Confidence: 0.943290933333333

00:01:31.165 --> 00:01:33.080 as the posterior descending artery,

NOTE Confidence: 0.943290933333333

00:01:33.080 --> 00:01:35.600 which is what determines dominance

NOTE Confidence: 0.943290933333333

00:01:35.600 --> 00:01:36.820 10% of the time.

NOTE Confidence: 0.943290933333333

00:01:36.820 --> 00:01:38.040 The posterior descending artery

NOTE Confidence: 0.943290933333333

00:01:38.040 --> 00:01:39.920 comes off of the left circumflex,

NOTE Confidence: 0.943290933333333

00:01:39.920 --> 00:01:41.960 which is a left dominant system.

NOTE Confidence: 0.943290933333333

00:01:41.960 --> 00:01:42.960 As you can see here,

NOTE Confidence: 0.943290933333333

00:01:42.960 --> 00:01:44.980 the arteries supply multiple different

NOTE Confidence: 0.943290933333333

00:01:44.980 --> 00:01:47.490 territories and can lead to a

NOTE Confidence: 0.943290933333333

00:01:47.490 --> 00:01:49.202 variety of clinical presentations

NOTE Confidence: 0.943290933333333

00:01:49.202 --> 00:01:50.914 of acute coronary syndrome.

NOTE Confidence: 0.943290933333333

00:01:50.920 --> 00:01:53.356 Now let's delve into some pathophysiology.

NOTE Confidence: 0.943290933333333

00:01:53.360 --> 00:01:55.380 Acute coronary syndrome is a

NOTE Confidence: 0.943290933333333

00:01:55.380 --> 00:01:56.996 spectrum of cardiac dysfunction.

NOTE Confidence: 0.943290933333333

00:01:57.000 --> 00:01:58.011 On the left,

NOTE Confidence: 0.943290933333333

00:01:58.011 --> 00:02:00.033 we have a healthy coronary artery.

NOTE Confidence: 0.943290933333333

00:02:00.040 --> 00:02:00.840 Over time,

NOTE Confidence: 0.943290933333333

00:02:00.840 --> 00:02:02.840 atherosclerotic plaques can build up,

NOTE Confidence: 0.943290933333333

00:02:02.840 --> 00:02:05.336 which creates supply demand mismatch and

NOTE Confidence: 0.943290933333333

00:02:05.336 --> 00:02:08.120 reduced oxygen delivery to cardiac myocytes.

NOTE Confidence: 0.943290933333333

00:02:08.120 --> 00:02:09.000 In patients,

NOTE Confidence: 0.943290933333333

00:02:09.000 --> 00:02:12.080 this manifests as chest pain or angina.

NOTE Confidence: 0.943290933333333

00:02:12.080 --> 00:02:14.100 Patients who have angina with

NOTE Confidence: 0.943290933333333

00:02:14.100 --> 00:02:15.716 exertion have stable angina,

NOTE Confidence: 0.943290933333333

00:02:15.720 --> 00:02:17.976 which is not on the spectrum

NOTE Confidence: 0.943290933333333

00:02:17.976 --> 00:02:19.480 of acute coronary syndromes.

NOTE Confidence: 0.943290933333333

00:02:19.480 --> 00:02:21.550 Patients who have chest pain or

NOTE Confidence: 0.943290933333333

00:02:21.550 --> 00:02:24.080 angina at rest have unstable angina.

NOTE Confidence: 0.943290933333333

00:02:24.080 --> 00:02:26.305 These patients are essentially having

NOTE Confidence: 0.943290933333333

00:02:26.305 --> 00:02:28.530 ischemia without infarction and thus

NOTE Confidence: 0.943290933333333

00:02:28.593 --> 00:02:31.233 they don't have elevated troponin or any St.

NOTE Confidence: 0.943290933333333

00:02:31.240 --> 00:02:32.452 elevations on their EKG.

NOTE Confidence: 0.943290933333333

00:02:32.452 --> 00:02:34.703 But this does need to be further

NOTE Confidence: 0.943290933333333

00:02:34.703 --> 00:02:36.929 monitored and evaluated as it can

NOTE Confidence: 0.943290933333333

00:02:36.929 --> 00:02:39.277 progress to either STEMI or end STEMI.

NOTE Confidence: 0.944429937368421

00:02:41.640 --> 00:02:43.962 Sometimes this plaque can rupture which

NOTE Confidence: 0.944429937368421

00:02:43.962 --> 00:02:46.184 leads to thrombosis where the area

NOTE Confidence: 0.944429937368421

00:02:46.184 --> 00:02:48.312 for blood flow is even more narrowed,

NOTE Confidence: 0.944429937368421

00:02:48.320 --> 00:02:49.718 worsening any existing

NOTE Confidence: 0.944429937368421

00:02:49.718 --> 00:02:51.116 supply demand mismatch.

NOTE Confidence: 0.944429937368421

00:02:51.120 --> 00:02:52.080 But as we can see here,

NOTE Confidence: 0.944429937368421

00:02:52.080 --> 00:02:54.360 the vessel is not totally occluded,

NOTE Confidence: 0.944429937368421

00:02:54.360 --> 00:02:56.664 therefore blood supply is limited furthest

NOTE Confidence: 0.944429937368421

00:02:56.664 --> 00:02:59.718 from the vessel or in the sub endocardium.

NOTE Confidence: 0.944429937368421

00:02:59.720 --> 00:03:02.300 These patients will have elevated troponins

NOTE Confidence: 0.944429937368421

00:03:02.300 --> 00:03:04.964 due to myocardial cell death and on

NOTE Confidence: 0.944429937368421

00:03:04.964 --> 00:03:07.236 their EKG they will not have typical St.

NOTE Confidence: 0.944429937368421

00:03:07.240 --> 00:03:09.080 elevations but may have other

NOTE Confidence: 0.944429937368421

00:03:09.080 --> 00:03:10.920 EKG changes such as St.

NOTE Confidence: 0.944429937368421

00:03:10.920 --> 00:03:13.398 depressions or T wave inversions which

NOTE Confidence: 0.944429937368421

00:03:13.398 --> 00:03:17.480 we will discuss later in the video.

NOTE Confidence: 0.944429937368421

00:03:17.480 --> 00:03:19.776 On the far right we have a totally

NOTE Confidence: 0.944429937368421

00:03:19.776 --> 00:03:21.046 occluded coronary artery which

NOTE Confidence: 0.944429937368421

00:03:21.046 --> 00:03:22.966 results in cell death the entire

NOTE Confidence: 0.944429937368421

00:03:22.966 --> 00:03:25.107 thickness of the myocardium and this

NOTE Confidence: 0.944429937368421

00:03:25.107 --> 00:03:26.912 is what produces characteristic St.

NOTE Confidence: 0.944429937368421

00:03:26.920 --> 00:03:29.460 elevations on EKG along with

NOTE Confidence: 0.944429937368421

00:03:29.460 --> 00:03:30.476 elevated troponin.

NOTE Confidence: 0.938185707142857

00:03:32.720 --> 00:03:34.554 Now let's take it to the bedside.

NOTE Confidence: 0.938185707142857

00:03:34.560 --> 00:03:36.530 One of the four nurses lets you know that a

NOTE Confidence: 0.938185707142857

00:03:36.577 --> 00:03:38.638 patient is having eight out of 10 chest pain.

NOTE Confidence: 0.938185707142857

00:03:38.640 --> 00:03:41.020 This is definitely something I would go

NOTE Confidence: 0.938185707142857

00:03:41.020 --> 00:03:42.757 evaluate in person. First things first,

NOTE Confidence: 0.938185707142857

00:03:42.757 --> 00:03:44.687 you want to make sure your patient is

NOTE Confidence: 0.938185707142857

00:03:44.687 --> 00:03:46.157 stable by grabbing a set of vitals.

NOTE Confidence: 0.938185707142857

00:03:46.160 --> 00:03:48.152 Then, while I talk to the patient and

NOTE Confidence: 0.938185707142857

00:03:48.152 --> 00:03:50.275 assess them and get their chest pain story,

NOTE Confidence: 0.938185707142857

00:03:50.280 --> 00:03:52.827 I would ask the nurse to grab an EKG

NOTE Confidence: 0.938185707142857

00:03:52.827 --> 00:03:55.320 and be prepared to drop troponins.

NOTE Confidence: 0.938185707142857

00:03:55.320 --> 00:03:57.184 Characteristic symptoms of acute

NOTE Confidence: 0.938185707142857

00:03:57.184 --> 00:03:59.048 coronary syndromes include chest

NOTE Confidence: 0.938185707142857

00:03:59.048 --> 00:04:01.200 pain that's central substernal,

NOTE Confidence: 0.938185707142857

00:04:01.200 --> 00:04:03.344 described as heaviness, crushing,

NOTE Confidence: 0.938185707142857

00:04:03.344 --> 00:04:04.680 gripping, or pressure.

NOTE Confidence: 0.938185707142857

00:04:04.680 --> 00:04:07.400 It's typically worse with exertion and gets

NOTE Confidence: 0.938185707142857

00:04:07.400 --> 00:04:10.556 better with rest or sublingual nitroglycerin.

NOTE Confidence: 0.938185707142857

00:04:10.560 --> 00:04:12.079 There is kind of new terminology in

NOTE Confidence: 0.938185707142857

00:04:12.079 --> 00:04:13.760 the way we're describing chest pain.

NOTE Confidence: 0.938185707142857

00:04:13.760 --> 00:04:15.704 Previously we used to use words

NOTE Confidence: 0.938185707142857

00:04:15.704 --> 00:04:17.000 like typical and atypical,

NOTE Confidence: 0.938185707142857

00:04:17.000 --> 00:04:18.415 but now the guidelines recommend

NOTE Confidence: 0.938185707142857

00:04:18.415 --> 00:04:20.240 describing chest pain as cardiac,

NOTE Confidence: 0.938185707142857

00:04:20.240 --> 00:04:22.560 possibly cardiac and non cardiac,

NOTE Confidence: 0.938185707142857

00:04:22.560 --> 00:04:25.038 and we can see here different descriptors

NOTE Confidence: 0.938185707142857

00:04:25.038 --> 00:04:27.228 and the probability of ischemia based

NOTE Confidence: 0.938185707142857

00:04:27.228 --> 00:04:29.358 on what symptoms patients are having.

NOTE Confidence: 0.938185707142857

00:04:29.360 --> 00:04:32.176 Other symptoms include diaphoresis,

NOTE Confidence: 0.938185707142857

00:04:32.176 --> 00:04:34.800 nausea, and often abdominal discomfort,

NOTE Confidence: 0.938185707142857

00:04:34.800 --> 00:04:36.720 which can mimic indigestion.

NOTE Confidence: 0.938185707142857

00:04:36.720 --> 00:04:38.136 These non characteristic symptoms

NOTE Confidence: 0.938185707142857

00:04:38.136 --> 00:04:39.906 of acute coronary syndromes are

NOTE Confidence: 0.938185707142857

00:04:39.906 --> 00:04:41.449 thought to occur more frequently

NOTE Confidence: 0.938185707142857

00:04:41.449 --> 00:04:42.874 in women and older patients,

NOTE Confidence: 0.938185707142857

00:04:42.880 --> 00:04:44.920 and so your degree of suspicion

NOTE Confidence: 0.938185707142857

00:04:44.920 --> 00:04:46.620 for acute coronary syndromes needs

NOTE Confidence: 0.938185707142857

00:04:46.620 --> 00:04:48.318 to be higher in these groups.

NOTE Confidence: 0.938185707142857

00:04:48.320 --> 00:04:50.448 On exam, you're looking for signs or

NOTE Confidence: 0.938185707142857

00:04:50.448 --> 00:04:52.399 symptoms of poor cardiac function,

NOTE Confidence: 0.938185707142857

00:04:52.400 --> 00:04:54.340 including jugular, venous distension,

NOTE Confidence: 0.938185707142857

00:04:54.340 --> 00:04:56.280 leg edema or crackles,

NOTE Confidence: 0.938185707142857

00:04:56.280 --> 00:04:57.218 or hypotension.

NOTE Confidence: 0.938185707142857

00:04:57.218 --> 00:04:59.563 You may also see hypertension

NOTE Confidence: 0.938185707142857

00:04:59.563 --> 00:05:02.122 given high sympathetic drive in the

NOTE Confidence: 0.938185707142857

00:05:02.122 --> 00:05:03.854 acute setting and then bradycardia

NOTE Confidence: 0.938185707142857

00:05:03.854 --> 00:05:05.882 may be suggestive of RV ischemia

NOTE Confidence: 0.938185707142857

00:05:05.882 --> 00:05:07.919 or right ventricular embarked.

NOTE Confidence: 0.97771066

00:05:10.240 --> 00:05:11.420 The differential for acute

NOTE Confidence: 0.97771066

00:05:11.420 --> 00:05:13.120 chest pain is pretty broad,

NOTE Confidence: 0.708025408333333

00:05:13.120 --> 00:05:14.950 and there's several other can't

NOTE Confidence: 0.708025408333333

00:05:14.950 --> 00:05:16.400 misdiagnosis that can masquerade

NOTE Confidence: 0.708025408333333

00:05:16.400 --> 00:05:18.160 as acute coronary syndrome,

NOTE Confidence: 0.708025408333333

00:05:18.160 --> 00:05:20.920 such as aortic aneurysm or dissection,

NOTE Confidence: 0.708025408333333

00:05:20.920 --> 00:05:23.520 pneumothorax, pulmonary embolisms,

NOTE Confidence: 0.708025408333333

00:05:23.520 --> 00:05:26.310 or any type of gastric or

NOTE Confidence: 0.708025408333333

00:05:26.310 --> 00:05:27.240 esophageal perforation.

NOTE Confidence: 0.708025408333333

00:05:27.240 --> 00:05:29.298 Some other key fiscal exam pearls are

NOTE Confidence: 0.708025408333333

00:05:29.298 --> 00:05:31.593 that if you have chest pain that's

NOTE Confidence: 0.708025408333333

00:05:31.593 --> 00:05:34.280 reproducible on exam or tender to palpation,

NOTE Confidence: 0.708025408333333

00:05:34.280 --> 00:05:36.680 should think of MSK etiologies such

NOTE Confidence: 0.708025408333333

00:05:36.680 --> 00:05:38.720 as costochondritis or rib fractures.

NOTE Confidence: 0.708025408333333

00:05:38.720 --> 00:05:40.880 If you have pain that's positional,

NOTE Confidence: 0.708025408333333

00:05:40.880 --> 00:05:42.605 such as pain that improves

NOTE Confidence: 0.708025408333333

00:05:42.605 --> 00:05:43.640 with leaning forward,

NOTE Confidence: 0.708025408333333

00:05:43.640 --> 00:05:46.136 that's thought to be related to

NOTE Confidence: 0.708025408333333

00:05:46.136 --> 00:05:47.800 pericarditis or pericardial inflammation.

NOTE Confidence: 0.708025408333333

00:05:47.800 --> 00:05:49.543 And if you have chest pain that's

NOTE Confidence: 0.708025408333333

00:05:49.543 --> 00:05:50.920 worsened with deep inspiration,

NOTE Confidence: 0.708025408333333

00:05:50.920 --> 00:05:52.640 it's characteristic of pleurisy.

NOTE Confidence: 0.714606841111111

00:05:54.600 --> 00:05:55.648 You've thought through your

NOTE Confidence: 0.714606841111111

00:05:55.648 --> 00:05:56.958 differential and assess your patient,

NOTE Confidence: 0.714606841111111

00:05:56.960 --> 00:05:58.920 and the nurse hands you the EKG.

NOTE Confidence: 0.714606841111111

00:05:58.920 --> 00:06:00.756 How do you make a diagnosis?

NOTE Confidence: 0.714606841111111

00:06:00.760 --> 00:06:03.434 STEMI is diagnosed based on STEMI criteria,

NOTE Confidence: 0.714606841111111

00:06:03.440 --> 00:06:04.862 which is St.

NOTE Confidence: 0.714606841111111

00:06:04.862 --> 00:06:07.706 elevations over 1mm and two contiguous

NOTE Confidence: 0.714606841111111

00:06:07.706 --> 00:06:10.515 leads except for leads V2 and V3,

NOTE Confidence: 0.714606841111111

00:06:10.520 --> 00:06:13.877 which differ by age and gender as seen below.

NOTE Confidence: 0.714606841111111

00:06:13.880 --> 00:06:16.071 The key is looking for changes in

NOTE Confidence: 0.714606841111111

00:06:16.071 --> 00:06:17.718 contiguous leads as well as St.

NOTE Confidence: 0.714606841111111

00:06:17.720 --> 00:06:20.260 depressions in electrically opposite leads

NOTE Confidence: 0.714606841111111

00:06:20.260 --> 00:06:22.800 in areas that correlate anatomically.

NOTE Confidence: 0.714606841111111

00:06:22.800 --> 00:06:25.960 As we can see here, 2-3 and ADF are inferior.

NOTE Confidence: 0.714606841111111

00:06:25.960 --> 00:06:28.360 Leads correlating with RCA

NOTE Confidence: 0.714606841111111

00:06:28.360 --> 00:06:30.550 territory V1 is interceptal,

NOTE Confidence: 0.714606841111111

00:06:30.550 --> 00:06:33.912 V2 to V4 are anterior leads correlating

NOTE Confidence: 0.714606841111111

00:06:33.912 --> 00:06:36.352 with left anterior descending territory,

NOTE Confidence: 0.714606841111111

00:06:36.360 --> 00:06:38.340 V5 to V6 are interolateral and

NOTE Confidence: 0.714606841111111

00:06:38.340 --> 00:06:40.719 one ADL are high lateral leads.

NOTE Confidence: 0.714606841111111

00:06:40.720 --> 00:06:43.096 These all correlate with

NOTE Confidence: 0.714606841111111

00:06:43.096 --> 00:06:44.878 left circumflex territory.

NOTE Confidence: 0.714606841111111

00:06:44.880 --> 00:06:46.224 In addition to St.

NOTE Confidence: 0.714606841111111

00:06:46.224 --> 00:06:46.560 elevations,

NOTE Confidence: 0.714606841111111

00:06:46.560 --> 00:06:48.588 you should also look for STEMI

NOTE Confidence: 0.714606841111111

00:06:48.588 --> 00:06:49.940 equivalents which can represent

NOTE Confidence: 0.714606841111111

00:06:50.001 --> 00:06:52.029 ongoing ischemia such as T wave

NOTE Confidence: 0.714606841111111

00:06:52.029 --> 00:06:53.879 abnormalities like hyper acute T waves.

NOTE Confidence: 0.714606841111111

00:06:53.880 --> 00:06:55.902 This can happen within minutes of

NOTE Confidence: 0.714606841111111

00:06:55.902 --> 00:06:57.640 ischemia and often precedes to St.

NOTE Confidence: 0.714606841111111

00:06:57.640 --> 00:06:58.160 changes.

NOTE Confidence: 0.714606841111111

00:06:58.160 --> 00:07:02.320 So here's an example where we see hyper

NOTE Confidence: 0.714606841111111

00:07:02.320 --> 00:07:05.636 acute T waves and most prominently

NOTE Confidence: 0.714606841111111

00:07:05.640 --> 00:07:08.560 V2V3V4 and they're often bulky,

NOTE Confidence: 0.714606841111111

00:07:08.560 --> 00:07:10.090 wide at the base and localized

NOTE Confidence: 0.714606841111111

00:07:10.090 --> 00:07:11.800 to the anatomic area of infarct.

NOTE Confidence: 0.714606841111111

00:07:11.800 --> 00:07:15.520 So this here would be the LED territory.

NOTE Confidence: 0.714606841111111

00:07:15.520 --> 00:07:17.040 You can also have biphasic

NOTE Confidence: 0.714606841111111

00:07:17.040 --> 00:07:18.560 or deeply inverted T waves,

NOTE Confidence: 0.714606841111111

00:07:18.560 --> 00:07:20.360 which are known as Wellens pattern.

NOTE Confidence: 0.714606841111111

00:07:20.360 --> 00:07:22.775 So here's an example of Wellens type

NOTE Confidence: 0.714606841111111

00:07:22.775 --> 00:07:24.998 A which are the biphasic T waves.

NOTE Confidence: 0.714606841111111

00:07:25.000 --> 00:07:28.132 We can see their most prominent

NOTE Confidence: 0.714606841111111

00:07:28.132 --> 00:07:30.680 here in B2 and B3.

NOTE Confidence: 0.714606841111111

00:07:30.680 --> 00:07:33.200 And here's an example of Wellens type B,

NOTE Confidence: 0.714606841111111

00:07:33.200 --> 00:07:34.545 which is deep symmetric inverted

NOTE Confidence: 0.714606841111111

00:07:34.545 --> 00:07:36.832 T waves as we can see here in

NOTE Confidence: 0.714606841111111

00:07:36.832 --> 00:07:37.720 the precordial leads,

NOTE Confidence: 0.714606841111111

00:07:37.720 --> 00:07:38.560 most notably in

NOTE Confidence: 0.939747545714286

00:07:40.920 --> 00:07:42.207 B2B3B4B5 and B6.

NOTE Confidence: 0.939747545714286

00:07:42.207 --> 00:07:45.210 And this is highly specific for critical

NOTE Confidence: 0.939747545714286

00:07:45.292 --> 00:07:47.625 LED stenosis as with Welland's type A.

NOTE Confidence: 0.939747545714286

00:07:47.625 --> 00:07:50.080 So to make a diagnosis of Welland's syndrome,

NOTE Confidence: 0.939747545714286

00:07:50.080 --> 00:07:53.600 you'll see deep inverted or biphasic T waves,

NOTE Confidence: 0.939747545714286

00:07:53.600 --> 00:07:56.780 most commonly in V2 to V3 can also be seen

NOTE Confidence: 0.939747545714286

00:07:56.860 --> 00:08:00.120 in V1 to V6 as seen in this EKG minimal St.

NOTE Confidence: 0.939747545714286

00:08:00.120 --> 00:08:02.004 elevations less than 1mm.

NOTE Confidence: 0.939747545714286

00:08:02.004 --> 00:08:04.359 There's no precordial Q waves,

NOTE Confidence: 0.939747545714286

00:08:04.360 --> 00:08:06.360 there's preserved R wave progression.

NOTE Confidence: 0.939747545714286

00:08:06.360 --> 00:08:08.271 There's a history of recent angina and

NOTE Confidence: 0.939747545714286

00:08:08.271 --> 00:08:10.693 the EKG that you get with the biphasic or

NOTE Confidence: 0.939747545714286

00:08:10.693 --> 00:08:13.226 inverted T waves is in a pain Free State

NOTE Confidence: 0.939747545714286

00:08:13.226 --> 00:08:14.975 because often when these patients have

NOTE Confidence: 0.939747545714286

00:08:14.975 --> 00:08:17.040 chest pain the T waves become upright,

NOTE Confidence: 0.939747545714286

00:08:17.040 --> 00:08:19.440 which is known as pseudo normalization.

NOTE Confidence: 0.939747545714286

00:08:19.440 --> 00:08:22.020 The management implication is because these

NOTE Confidence: 0.939747545714286

00:08:22.020 --> 00:08:24.480 patients typically have critical LED disease,

NOTE Confidence: 0.939747545714286

00:08:24.480 --> 00:08:28.260 they do need to be taken for

NOTE Confidence: 0.939747545714286

00:08:28.260 --> 00:08:29.880 urgent coronary angiography.

NOTE Confidence: 0.939747545714286

00:08:29.880 --> 00:08:30.152 St.

NOTE Confidence: 0.939747545714286

00:08:30.152 --> 00:08:32.600 depressions in V1 to V3 with the Pulmona R

NOTE Confidence: 0.939747545714286

00:08:32.663 --> 00:08:35.160 wave is also a semi equivalent because this

NOTE Confidence: 0.939747545714286

00:08:35.160 --> 00:08:37.632 represents A posterior myocardial infarction.

NOTE Confidence: 0.939747545714286

00:08:37.632 --> 00:08:40.038 We can go through an example here.

NOTE Confidence: 0.939747545714286

00:08:40.040 --> 00:08:42.677 So on this EKG we most notably see St.

NOTE Confidence: 0.939747545714286

00:08:42.680 --> 00:08:45.912 elevations in leads 2-3

NOTE Confidence: 0.939747545714286

00:08:45.912 --> 00:08:48.586 AVF as well as V5 and V6.

NOTE Confidence: 0.939747545714286

00:08:48.586 --> 00:08:50.704 So this localizes to the inferior

NOTE Confidence: 0.939747545714286

00:08:50.704 --> 00:08:52.280 and lateral territories.

NOTE Confidence: 0.939747545714286

00:08:52.280 --> 00:08:53.880 Whenever you have inferior St.

NOTE Confidence: 0.939747545714286

00:08:53.880 --> 00:08:55.637 elevations, you always have to check to

NOTE Confidence: 0.939747545714286

00:08:55.637 --> 00:08:57.998 see if the infarct has spread posteriorly,

NOTE Confidence: 0.939747545714286

00:08:58.000 --> 00:08:59.575 which you can see reflected

NOTE Confidence: 0.939747545714286

00:08:59.575 --> 00:09:00.520 reciprocally as St.

NOTE Confidence: 0.939747545714286

00:09:00.520 --> 00:09:03.560 depressions and V1 to V3.

NOTE Confidence: 0.939747545714286

00:09:03.560 --> 00:09:06.160 As we can see here, we do have St.

NOTE Confidence: 0.939747545714286

00:09:06.160 --> 00:09:07.520 depressions in these leads.

NOTE Confidence: 0.939747545714286

00:09:07.520 --> 00:09:09.344 If we were to turn these leads upside down,

NOTE Confidence: 0.939747545714286

00:09:09.344 --> 00:09:10.856 we'd see St.

NOTE Confidence: 0.939747545714286

00:09:10.856 --> 00:09:11.360 elevations.

NOTE Confidence: 0.939747545714286

00:09:11.360 --> 00:09:13.808 This is consistent overall with an

NOTE Confidence: 0.939747545714286

00:09:13.808 --> 00:09:15.440 inferior lateral posterior STEMI.

NOTE Confidence: 0.939747545714286

00:09:15.440 --> 00:09:16.080 And again,

NOTE Confidence: 0.939747545714286

00:09:16.080 --> 00:09:17.360 this is because anatomically,

NOTE Confidence: 0.939747545714286

00:09:17.360 --> 00:09:18.996 the right coronary artery

NOTE Confidence: 0.939747545714286

00:09:18.996 --> 00:09:21.041 usually ends and terminates as

NOTE Confidence: 0.939747545714286

00:09:21.041 --> 00:09:23.438 the posterior descending artery.

NOTE Confidence: 0.939747545714286

00:09:23.440 --> 00:09:25.435 If we wanted to confirm this diagnosis,

NOTE Confidence: 0.939747545714286

00:09:25.440 --> 00:09:27.660 we could place posterior leads

NOTE Confidence: 0.939747545714286

00:09:27.660 --> 00:09:31.740 which are V7 to V9 and see the St.

NOTE Confidence: 0.939747545714286

00:09:31.740 --> 00:09:33.600 elevations with these leads.

NOTE Confidence: 0.939747545714286

00:09:33.600 --> 00:09:35.492 Important to note is that to diagnose

NOTE Confidence: 0.939747545714286

00:09:35.492 --> 00:09:37.560 a posterior STEMI you only need St.

NOTE Confidence: 0.939747545714286

00:09:37.560 --> 00:09:39.389 elevations that are .5mm,

NOTE Confidence: 0.939747545714286

00:09:39.389 --> 00:09:41.963 and this is associated with worst

NOTE Confidence: 0.939747545714286

00:09:41.963 --> 00:09:44.371 outcomes as it represents a

NOTE Confidence: 0.939747545714286

00:09:44.371 --> 00:09:46.439 larger area of infarction.

NOTE Confidence: 0.939747545714286

00:09:46.440 --> 00:09:46.680 A new

NOTE Confidence: 0.919146962222222

00:09:46.680 --> 00:09:47.904 left bundle branch block

NOTE Confidence: 0.919146962222222

00:09:47.904 --> 00:09:49.434 is also a STEMI equivalent.

NOTE Confidence: 0.919146962222222

00:09:49.440 --> 00:09:51.223 In these situations we use Scarbosa

NOTE Confidence: 0.919146962222222

00:09:51.223 --> 00:09:52.789 criteria, which we will not go

NOTE Confidence: 0.919146962222222

00:09:52.789 --> 00:09:54.238 into too much detail about,

NOTE Confidence: 0.919146962222222

00:09:54.240 --> 00:09:56.370 but the principle is you're looking

NOTE Confidence: 0.919146962222222

00:09:56.370 --> 00:09:58.000 for inappropriate concordance with St.

NOTE Confidence: 0.919146962222222

00:09:58.000 --> 00:10:00.160 segments or excessive discordance,

NOTE Confidence: 0.938342625

00:10:01.440 --> 00:10:02.280 And then other patterns

NOTE Confidence: 0.840835780909091

00:10:02.280 --> 00:10:04.177 of ischemia that may be suggestive of

NOTE Confidence: 0.840835780909091

00:10:04.177 --> 00:10:07.246 end STEMI or unstable angina include St.

NOTE Confidence: 0.840835780909091

00:10:07.246 --> 00:10:09.361 depressions that localize to a

NOTE Confidence: 0.840835780909091

00:10:09.361 --> 00:10:11.998 specific area or T wave inversions.

NOTE Confidence: 0.840835780909091

00:10:12.000 --> 00:10:13.560 You could also see Q waves,

NOTE Confidence: 0.840835780909091

00:10:13.560 --> 00:10:15.436 which are evidence of a completed infarct,

NOTE Confidence: 0.840835780909091

00:10:15.440 --> 00:10:17.390 as these usually occur 12 hours

NOTE Confidence: 0.840835780909091

00:10:17.390 --> 00:10:20.080 after the initial ischemic insult.

NOTE Confidence: 0.840835780909091

00:10:20.080 --> 00:10:21.760 Now that we've learned how to

NOTE Confidence: 0.840835780909091

00:10:21.760 --> 00:10:22.880 diagnose acute coronary syndromes,

NOTE Confidence: 0.840835780909091

00:10:22.880 --> 00:10:24.956 we can focus on the management.

NOTE Confidence: 0.840835780909091

00:10:24.960 --> 00:10:27.184 I'd say one of the most important and

NOTE Confidence: 0.840835780909091

00:10:27.184 --> 00:10:29.185 time sensitive decisions that needs to be

NOTE Confidence: 0.840835780909091

00:10:29.185 --> 00:10:31.501 made in the management of acute coronary

NOTE Confidence: 0.840835780909091

00:10:31.501 --> 00:10:33.676 syndromes is regarding re vascularization.

NOTE Confidence: 0.840835780909091

00:10:33.680 --> 00:10:34.958 If you think you see St.

NOTE Confidence: 0.840835780909091

00:10:34.960 --> 00:10:37.560 elevations or any STEMI equivalents,

NOTE Confidence: 0.840835780909091

00:10:37.560 --> 00:10:39.975 I would call cardiology right away to

NOTE Confidence: 0.840835780909091

00:10:39.975 --> 00:10:41.760 confirm these findings and if true,

NOTE Confidence: 0.840835780909091

00:10:41.760 --> 00:10:44.376 activate the Cath lab Guidelines suggest

NOTE Confidence: 0.840835780909091

00:10:44.376 --> 00:10:47.084 that these patients should be emergently

NOTE Confidence: 0.840835780909091

00:10:47.084 --> 00:10:49.314 re vascularized within 90 minutes.

NOTE Confidence: 0.840835780909091

00:10:49.320 --> 00:10:50.865 Sometimes in situations where patients

NOTE Confidence: 0.840835780909091

00:10:50.865 --> 00:10:53.000 aren't close to Cath lab facilities,

NOTE Confidence: 0.840835780909091

00:10:53.000 --> 00:10:54.408 TPA may be used,

NOTE Confidence: 0.840835780909091

00:10:54.408 --> 00:10:56.520 but this is very infrequent in

NOTE Confidence: 0.840835780909091

00:10:56.597 --> 00:10:58.917 large academic centers like PO.

NOTE Confidence: 0.840835780909091

00:10:58.920 --> 00:11:00.120 If you don't see any St.

NOTE Confidence: 0.840835780909091

00:11:00.120 --> 00:11:00.540 elevations,

NOTE Confidence: 0.840835780909091

00:11:00.540 --> 00:11:03.060 but the patient has EKG changes

NOTE Confidence: 0.840835780909091

00:11:03.060 --> 00:11:04.742 or troponins consistent with

NOTE Confidence: 0.840835780909091

00:11:04.742 --> 00:11:06.517 end STEMI or unstable angina,

NOTE Confidence: 0.840835780909091

00:11:06.520 --> 00:11:09.028 they may meet criteria for immediate

NOTE Confidence: 0.840835780909091

00:11:09.028 --> 00:11:10.700 invasive angiography within two

NOTE Confidence: 0.840835780909091

00:11:10.762 --> 00:11:12.855 hours if they have any of the

NOTE Confidence: 0.840835780909091

00:11:12.855 --> 00:11:14.272 following hemodynamic instability,

NOTE Confidence: 0.840835780909091

00:11:14.272 --> 00:11:16.496 new left ventricular dysfunction

NOTE Confidence: 0.840835780909091

00:11:16.496 --> 00:11:18.720 or dropped ejection fraction,

NOTE Confidence: 0.840835780909091

00:11:18.720 --> 00:11:21.160 persistent chest pain at rest

NOTE Confidence: 0.840835780909091

00:11:21.160 --> 00:11:23.112 despite optimal medical management,

NOTE Confidence: 0.840835780909091

00:11:23.120 --> 00:11:26.319 up trending troponins or dynamic EKG changes,

NOTE Confidence: 0.840835780909091

00:11:26.320 --> 00:11:27.754 sustained ventricular arrhythmias,

NOTE Confidence: 0.840835780909091

00:11:27.754 --> 00:11:31.100 or evidence of late presenting MI like

NOTE Confidence: 0.840835780909091

00:11:31.171 --> 00:11:33.397 a new VSD or mitral regurgitation.

NOTE Confidence: 0.840835780909091

00:11:33.400 --> 00:11:35.240 If you don't see any of these findings,

NOTE Confidence: 0.840835780909091

00:11:35.240 --> 00:11:37.856 you have some time to get serial Ekgs

NOTE Confidence: 0.840835780909091

00:11:37.856 --> 00:11:40.327 and trend troponins and can further

NOTE Confidence: 0.840835780909091

00:11:40.327 --> 00:11:42.484 risk stratify with risk stratification

NOTE Confidence: 0.840835780909091

00:11:42.484 --> 00:11:44.594 tools like Grace and Timmy.

NOTE Confidence: 0.840835780909091

00:11:44.600 --> 00:11:46.896 These will help determine if a patient

NOTE Confidence: 0.840835780909091

00:11:46.896 --> 00:11:48.750 may benefit from early invasive

NOTE Confidence: 0.840835780909091

00:11:48.750 --> 00:11:51.180 angiography which is within 24 hours

NOTE Confidence: 0.840835780909091

00:11:51.180 --> 00:11:52.580 delayed invasive angiography which

NOTE Confidence: 0.840835780909091

00:11:52.580 --> 00:11:55.088 is in 48 to 72 hours or an ischemia

NOTE Confidence: 0.840835780909091

00:11:55.088 --> 00:11:57.128 guided approach which is based

NOTE Confidence: 0.840835780909091

00:11:57.128 --> 00:11:59.569 on further stress testing and or

NOTE Confidence: 0.840835780909091

00:11:59.569 --> 00:12:01.419 anatomic imaging which is usually

NOTE Confidence: 0.840835780909091

00:12:01.419 --> 00:12:03.480 reserved for lower risk patients.

NOTE Confidence: 0.840835780909091

00:12:03.480 --> 00:12:05.472 There are two key ways that

NOTE Confidence: 0.840835780909091

00:12:05.472 --> 00:12:06.800 patients can be revascularized.

NOTE Confidence: 0.840835780909091

00:12:06.800 --> 00:12:08.770 The first is via percutaneous

NOTE Confidence: 0.840835780909091

00:12:08.770 --> 00:12:09.558 coronary intervention,

NOTE Confidence: 0.840835780909091

00:12:09.560 --> 00:12:11.275 which is done in the Cath lab.

NOTE Confidence: 0.840835780909091

00:12:11.280 --> 00:12:11.902 In this,

NOTE Confidence: 0.840835780909091

00:12:11.902 --> 00:12:13.768 the operator gains access via the

NOTE Confidence: 0.840835780909091

00:12:13.768 --> 00:12:15.624 femoral or radial arteries and is

NOTE Confidence: 0.840835780909091

00:12:15.624 --> 00:12:18.069 able to snake a catheter up to the

NOTE Confidence: 0.840835780909091

00:12:18.069 --> 00:12:19.624 coronary arteries where they shoot

NOTE Confidence: 0.840835780909091

00:12:19.624 --> 00:12:21.598 dye to help identify any blockages.

NOTE Confidence: 0.840835780909091

00:12:21.598 --> 00:12:24.020 They can then open up the blood

NOTE Confidence: 0.840835780909091

00:12:24.083 --> 00:12:25.748 vessels via angioplasty and place

NOTE Confidence: 0.840835780909091

00:12:25.748 --> 00:12:28.359 a stent to keep the artery patent.

NOTE Confidence: 0.840835780909091

00:12:28.360 --> 00:12:30.880 Historically bare metal stents were placed,

NOTE Confidence: 0.840835780909091

00:12:30.880 --> 00:12:32.980 but nowadays you'll see drug eluting

NOTE Confidence: 0.840835780909091

00:12:32.980 --> 00:12:35.164 stents being placed due to the

NOTE Confidence: 0.840835780909091

00:12:35.164 --> 00:12:36.959 reduced rates of instant restenosis.

NOTE Confidence: 0.840835780909091

00:12:36.960 --> 00:12:38.256 If you have a patient that's

NOTE Confidence: 0.840835780909091

00:12:38.256 --> 00:12:39.120 had a stent placed,

NOTE Confidence: 0.840835780909091

00:12:39.120 --> 00:12:41.563 they need to be on dual antiplatelet

NOTE Confidence: 0.840835780909091

00:12:41.563 --> 00:12:44.118 therapy for at least one year after.

NOTE Confidence: 0.840835780909091

00:12:44.120 --> 00:12:46.238 The 2nd way that patients are

NOTE Confidence: 0.840835780909091

00:12:46.238 --> 00:12:48.480 revascularized is via coronary artery bypass

NOTE Confidence: 0.7788384325

00:12:48.480 --> 00:12:50.880 surgery. In this, the

NOTE Confidence: 0.836562203333333

00:12:50.880 --> 00:12:52.580 surgeon takes vessels from elsewhere

NOTE Confidence: 0.836562203333333

00:12:52.580 --> 00:12:54.734 like the saphenous vein or the

NOTE Confidence: 0.836562203333333

00:12:54.734 --> 00:12:56.302 internal thoracic mammary artery

NOTE Confidence: 0.836562203333333

00:12:56.302 --> 00:12:58.800 and actually bypasses the blockage.

NOTE Confidence: 0.836562203333333

00:12:58.800 --> 00:13:00.456 There are three key indications that

NOTE Confidence: 0.836562203333333

00:13:00.456 --> 00:13:02.595 we need to know for which patients

NOTE Confidence: 0.836562203333333

00:13:02.595 --> 00:13:04.320 should be considered for cabbage.

NOTE Confidence: 0.836562203333333

00:13:04.320 --> 00:13:07.320 The 1st is left mean coronary artery disease,

NOTE Confidence: 0.836562203333333

00:13:07.320 --> 00:13:09.594 second is 2 vessel disease with

NOTE Confidence: 0.836562203333333

00:13:09.594 --> 00:13:11.110 left ventricular dysfunction and

NOTE Confidence: 0.836562203333333

00:13:11.169 --> 00:13:12.918 the third is 3 vessel disease,

NOTE Confidence: 0.836562203333333

00:13:12.920 --> 00:13:15.560 especially if the patient has diabetes.

NOTE Confidence: 0.836562203333333

00:13:15.560 --> 00:13:17.240 Now more and more we're also seeing

NOTE Confidence: 0.836562203333333

00:13:17.240 --> 00:13:19.305 the evolution of complex PCI which can

NOTE Confidence: 0.836562203333333

00:13:19.305 --> 00:13:21.529 be used when patients have complicated

NOTE Confidence: 0.836562203333333

00:13:21.529 --> 00:13:24.079 coronary anatomy like left mean disease,

NOTE Confidence: 0.836562203333333

00:13:24.080 --> 00:13:25.349 chronic total occlusions,

NOTE Confidence: 0.836562203333333

00:13:25.349 --> 00:13:27.041 calcific lesions or bifurcation

NOTE Confidence: 0.836562203333333

00:13:27.041 --> 00:13:29.392 lesions and can sometimes also be

NOTE Confidence: 0.836562203333333

00:13:29.392 --> 00:13:31.438 used as an alternative for surgery,

NOTE Confidence: 0.836562203333333

00:13:31.440 --> 00:13:32.840 especially if the patient isn't

NOTE Confidence: 0.836562203333333

00:13:32.840 --> 00:13:33.960 a good surgical candidate.

NOTE Confidence: 0.951362600909091

00:13:38.000 --> 00:13:39.695 Patients with acute coronary syndromes

NOTE Confidence: 0.951362600909091

00:13:39.695 --> 00:13:41.960 are also started on medical therapies.

NOTE Confidence: 0.951362600909091

00:13:41.960 --> 00:13:43.788 Regardless of whether they

NOTE Confidence: 0.951362600909091

00:13:43.788 --> 00:13:45.159 are revascularized initially,

NOTE Confidence: 0.951362600909091

00:13:45.160 --> 00:13:47.224 they should still be started on

NOTE Confidence: 0.951362600909091

00:13:47.224 --> 00:13:48.600 medications from various classes.

NOTE Confidence: 0.951362600909091

00:13:48.600 --> 00:13:51.330 The 1st is antiplatelet agents which

NOTE Confidence: 0.951362600909091

00:13:51.330 --> 00:13:53.150 prevent platelet activation are

NOTE Confidence: 0.951362600909091

00:13:53.220 --> 00:13:55.340 thereby anti thrombotic patients will

NOTE Confidence: 0.951362600909091

00:13:55.340 --> 00:13:57.080 usually be started on two agents,

NOTE Confidence: 0.951362600909091

00:13:57.080 --> 00:13:59.728 aspirin which is a Cox 1 inhibitor and

NOTE Confidence: 0.951362600909091

00:13:59.728 --> 00:14:02.929 then one other agent which is either

NOTE Confidence: 0.951362600909091

00:14:02.929 --> 00:14:05.394 Ticagralor Brilinta or Plavix Clopidogrel.

NOTE Confidence: 0.951362600909091

00:14:05.400 --> 00:14:08.948 Both of these work on P2Y12 and ADP which

NOTE Confidence: 0.951362600909091

00:14:08.948 --> 00:14:11.033 are involved in platelet aggregation.

NOTE Confidence: 0.951362600909091

00:14:11.040 --> 00:14:12.855 The difference between the two

NOTE Confidence: 0.951362600909091

00:14:12.855 --> 00:14:15.040 is that Ticagralor is the active

NOTE Confidence: 0.951362600909091

00:14:15.040 --> 00:14:17.472 drug and Plavix is a pro drug that

NOTE Confidence: 0.951362600909091

00:14:17.472 --> 00:14:19.793 needs to be metabolized and that

NOTE Confidence: 0.951362600909091

00:14:19.793 --> 00:14:21.514 metabolism depends on CYP 2C19.

NOTE Confidence: 0.951362600909091

00:14:21.514 --> 00:14:23.176 And so some patients are non

NOTE Confidence: 0.951362600909091

00:14:23.176 --> 00:14:24.767 responders to Plavix due to a

NOTE Confidence: 0.951362600909091

00:14:24.767 --> 00:14:26.237 loss of function in that gene.

NOTE Confidence: 0.951362600909091

00:14:26.240 --> 00:14:28.536 And so the effect of Plavix is less

NOTE Confidence: 0.951362600909091

00:14:28.536 --> 00:14:30.040 predictable in the population.

NOTE Confidence: 0.951362600909091

00:14:30.040 --> 00:14:31.624 But the benefit of using Plavix

NOTE Confidence: 0.951362600909091

00:14:31.624 --> 00:14:32.680 is that it's cheaper.

NOTE Confidence: 0.951362600909091

00:14:32.680 --> 00:14:34.888 So you can kind of just weigh the

NOTE Confidence: 0.951362600909091

00:14:34.888 --> 00:14:36.880 benefits and risks of each of those.

NOTE Confidence: 0.951362600909091

00:14:36.880 --> 00:14:38.259 And then the other note I'll make

NOTE Confidence: 0.951362600909091

00:14:38.259 --> 00:14:39.780 is that if you are suspicious

NOTE Confidence: 0.951362600909091

00:14:39.780 --> 00:14:40.956 about multi vessel disease,

NOTE Confidence: 0.951362600909091

00:14:40.960 --> 00:14:42.874 often patients will just be loaded

NOTE Confidence: 0.951362600909091

00:14:42.874 --> 00:14:44.810 with aspirin and they'll hold off

NOTE Confidence: 0.951362600909091

00:14:44.810 --> 00:14:46.315 on the 2nd antiplatelet agent.

NOTE Confidence: 0.951362600909091

00:14:46.320 --> 00:14:48.144 And that's because if they are going to

NOTE Confidence: 0.951362600909091

00:14:48.144 --> 00:14:50.275 go to surgery and they get that agent,

NOTE Confidence: 0.951362600909091

00:14:50.280 --> 00:14:51.612 they have to wait five days for

NOTE Confidence: 0.951362600909091

00:14:51.612 --> 00:14:53.325 that to wash out to reduce the

NOTE Confidence: 0.951362600909091

00:14:53.325 --> 00:14:54.800 risk of bleeding during surgery.

NOTE Confidence: 0.882283032222222

00:14:56.920 --> 00:14:58.805 The other major medication that

NOTE Confidence: 0.882283032222222

00:14:58.805 --> 00:15:00.313 we use is anticoagulation,

NOTE Confidence: 0.882283032222222

00:15:00.320 --> 00:15:01.616 which usually consists of

NOTE Confidence: 0.882283032222222

00:15:01.616 --> 00:15:03.236 a heparin drip or Lovenox.

NOTE Confidence: 0.882283032222222

00:15:03.240 --> 00:15:05.454 This is empirically continued for 48

NOTE Confidence: 0.882283032222222

00:15:05.454 --> 00:15:07.760 hours to prevent clot propagation.

NOTE Confidence: 0.882283032222222

00:15:07.760 --> 00:15:10.084 And then there's a couple of medications

NOTE Confidence: 0.882283032222222

00:15:10.084 --> 00:15:12.272 patients are started on long term to

NOTE Confidence: 0.882283032222222

00:15:12.272 --> 00:15:13.970 reduce their risk of adverse cardiac

NOTE Confidence: 0.882283032222222

00:15:14.030 --> 00:15:15.718 events and negative remodeling.

NOTE Confidence: 0.882283032222222

00:15:15.720 --> 00:15:17.680 The 1st is beta blockers.

NOTE Confidence: 0.882283032222222

00:15:17.680 --> 00:15:19.350 These work by reducing oxygen

NOTE Confidence: 0.882283032222222

00:15:19.350 --> 00:15:21.459 demand and also reducing the heart

NOTE Confidence: 0.882283032222222

00:15:21.459 --> 00:15:22.979 rate which thereby increases

NOTE Confidence: 0.882283032222222

00:15:22.979 --> 00:15:24.879 diastolic filling time which is

NOTE Confidence: 0.882283032222222

00:15:24.939 --> 00:15:26.839 when the coronaries are perfused.

NOTE Confidence: 0.882283032222222

00:15:26.840 --> 00:15:29.703 We also start Aces and Arbs which

NOTE Confidence: 0.882283032222222

00:15:29.703 --> 00:15:32.187 prevent negative remodeling over time and

NOTE Confidence: 0.882283032222222

00:15:32.187 --> 00:15:34.557 then moderate or high intensity statin.

NOTE Confidence: 0.882283032222222

00:15:34.560 --> 00:15:37.199 Then finally for symptoms we use anti

NOTE Confidence: 0.882283032222222

00:15:37.199 --> 00:15:39.678 anginals which mostly consist of nitrates.

NOTE Confidence: 0.882283032222222

00:15:39.680 --> 00:15:42.900 These reduce oxygen demand in our veno

NOTE Confidence: 0.882283032222222

00:15:42.900 --> 00:15:45.124 dilators and acute anginal attacks.

NOTE Confidence: 0.882283032222222

00:15:45.124 --> 00:15:47.770 We use sublingual and IV nitroglycerin

NOTE Confidence: 0.882283032222222

00:15:47.844 --> 00:15:50.516 because they avoid the GI system and

NOTE Confidence: 0.882283032222222

00:15:50.516 --> 00:15:52.387 nitrates are metabolized via first

NOTE Confidence: 0.882283032222222

00:15:52.387 --> 00:15:54.725 class metabolism and so an oral nitrate

NOTE Confidence: 0.882283032222222

00:15:54.725 --> 00:15:59.040 is not going to be as effective acutely.

NOTE Confidence: 0.882283032222222

00:15:59.040 --> 00:16:01.024 And then in terms of further work up

NOTE Confidence: 0.882283032222222

00:16:01.024 --> 00:16:02.638 and management on all these patients,

NOTE Confidence: 0.882283032222222

00:16:02.640 --> 00:16:04.632 we like to kind of further risk stratify

NOTE Confidence: 0.882283032222222

00:16:04.632 --> 00:16:06.479 them by checking a hemoglobin A1,

NOTE Confidence: 0.882283032222222

00:16:06.480 --> 00:16:07.602 CA lipid panel,

NOTE Confidence: 0.882283032222222

00:16:07.602 --> 00:16:09.472 getting an echocardiogram the subsequent

NOTE Confidence: 0.882283032222222

00:16:09.472 --> 00:16:11.916 day to evaluate if there's any

NOTE Confidence: 0.882283032222222

00:16:11.916 --> 00:16:13.961 regional wall motion abnormalities or

NOTE Confidence: 0.882283032222222

00:16:13.961 --> 00:16:16.037 changes to their ejection fraction.

NOTE Confidence: 0.882283032222222

00:16:16.040 --> 00:16:17.480 Then also focusing on

NOTE Confidence: 0.954549694

00:16:17.480 --> 00:16:20.040 modifiable lifestyle factors like encouraging

NOTE Confidence: 0.937177382

00:16:20.040 --> 00:16:21.144 smoking cessation and

NOTE Confidence: 0.937177382

00:16:21.144 --> 00:16:24.920 weight loss and exercise.

NOTE Confidence: 0.928537127916667

00:16:24.920 --> 00:16:27.494 Now we know how to diagnose and manage acute

NOTE Confidence: 0.928537127916667

00:16:27.494 --> 00:16:29.289 coronary syndromes and we can summarize

NOTE Confidence: 0.928537127916667

00:16:29.289 --> 00:16:31.719 it in an assessment and plan in the note.

NOTE Confidence: 0.928537127916667

00:16:31.720 --> 00:16:33.277 Things I like to focus on are the type

NOTE Confidence: 0.928537127916667

00:16:33.277 --> 00:16:35.130 of acute coronary syndrome, the location,

NOTE Confidence: 0.928537127916667

00:16:35.130 --> 00:16:37.265 any findings of the ischemic work up

NOTE Confidence: 0.928537127916667

00:16:37.265 --> 00:16:39.240 like if the patient underwent EKG,

NOTE Confidence: 0.928537127916667

00:16:39.240 --> 00:16:41.768 left heart Cath or any other type of

NOTE Confidence: 0.928537127916667

00:16:41.768 --> 00:16:43.479 ischemic evaluation and the treatment.

NOTE Confidence: 0.928537127916667

00:16:43.480 --> 00:16:44.775 So here's an example of how I

NOTE Confidence: 0.928537127916667

00:16:44.775 --> 00:16:45.800 would write up a patient,

NOTE Confidence: 0.928537127916667

00:16:45.800 --> 00:16:47.800 Miss S She's a 59 year old with a past

NOTE Confidence: 0.928537127916667

00:16:47.861 --> 00:16:50.236 medical history significant for hypertension,

NOTE Confidence: 0.928537127916667

00:16:50.240 --> 00:16:51.386 hyperlipidemia, tobacco use,

NOTE Confidence: 0.928537127916667

00:16:51.386 --> 00:16:53.296 who initially presented with eight

NOTE Confidence: 0.928537127916667

00:16:53.296 --> 00:16:55.229 out of 10 substernal chest pain

NOTE Confidence: 0.928537127916667

00:16:55.229 --> 00:16:57.120 at rest and her EKG showed St.

NOTE Confidence: 0.928537127916667

00:16:57.120 --> 00:16:59.360 elevations into three ABF.

NOTE Confidence: 0.928537127916667

00:16:59.360 --> 00:16:59.920 Ultimately,

NOTE Confidence: 0.928537127916667

00:16:59.920 --> 00:17:01.920 she was found to have a 90% occlusion of

NOTE Confidence: 0.928537127916667

00:17:01.920 --> 00:17:04.640 the RCA status post one drug eluting stent.

NOTE Confidence: 0.928537127916667

00:17:04.640 --> 00:17:06.350 So her presentation is consistent

NOTE Confidence: 0.928537127916667

00:17:06.350 --> 00:17:07.718 with an inferior STEMI.

NOTE Confidence: 0.928537127916667

00:17:07.720 --> 00:17:08.440 For this,

NOTE Confidence: 0.928537127916667

00:17:08.440 --> 00:17:10.240 we'll continue her dual antiplatelet

NOTE Confidence: 0.928537127916667

00:17:10.240 --> 00:17:12.080 therapy with aspirin and Brilinta.

NOTE Confidence: 0.928537127916667

00:17:12.080 --> 00:17:14.240 We'll start her on a high intensity statin,

NOTE Confidence: 0.928537127916667

00:17:14.240 --> 00:17:15.324 she'll get an echocardiogram

NOTE Confidence: 0.928537127916667

00:17:15.324 --> 00:17:17.379 and if that is normal then we'll

NOTE Confidence: 0.928537127916667

00:17:17.379 --> 00:17:18.879 start her on metoprolatartraate.

NOTE Confidence: 0.928537127916667

00:17:18.880 --> 00:17:20.848 We'll switch out her amlodipine to

NOTE Confidence: 0.928537127916667

00:17:20.848 --> 00:17:22.577 lisinopril which has cardio protective

NOTE Confidence: 0.928537127916667

00:17:22.577 --> 00:17:24.377 benefit and acute coronary syndromes

NOTE Confidence: 0.928537127916667

00:17:24.377 --> 00:17:27.196 and we'll also refer her to a smoking

NOTE Confidence: 0.928537127916667

00:17:27.196 --> 00:17:28.520 cessation program upon discharge.

NOTE Confidence: 0.928537127916667

00:17:28.520 --> 00:17:30.599 We can wrap up with some take home points.

NOTE Confidence: 0.928537127916667

00:17:30.600 --> 00:17:32.425 First is understanding the spectrum

NOTE Confidence: 0.928537127916667

00:17:32.425 --> 00:17:34.250 of acute coronary syndromes which

NOTE Confidence: 0.928537127916667

00:17:34.310 --> 00:17:36.055 includes unstable angina where patients

NOTE Confidence: 0.928537127916667

00:17:36.055 --> 00:17:38.527 present with chest pain at rest but

NOTE Confidence: 0.928537127916667

00:17:38.527 --> 00:17:40.192 don't necessarily have troponin or

NOTE Confidence: 0.928537127916667

00:17:40.192 --> 00:17:42.022 EKG changes because they're having

NOTE Confidence: 0.928537127916667

00:17:42.022 --> 00:17:44.077 ischemia Without evidence of infarction.

NOTE Confidence: 0.928537127916667

00:17:44.080 --> 00:17:45.945 Patients can have end STEMI

NOTE Confidence: 0.928537127916667

00:17:45.945 --> 00:17:47.437 characterized by sub endocardial

NOTE Confidence: 0.928537127916667

00:17:47.437 --> 00:17:49.277 ischemia which does not produce St.

NOTE Confidence: 0.928537127916667

00:17:49.280 --> 00:17:51.688 elevations on EKG but they can still

NOTE Confidence: 0.928537127916667

00:17:51.688 --> 00:17:54.080 have AC depressions or T wave inversions.

NOTE Confidence: 0.928537127916667

00:17:54.080 --> 00:17:56.312 They will have an elevated troponin

NOTE Confidence: 0.928537127916667

00:17:56.312 --> 00:17:58.268 and STEMI characterized by transviral

NOTE Confidence: 0.928537127916667

00:17:58.268 --> 00:17:59.900 infarction which produces the

NOTE Confidence: 0.928537127916667

00:17:59.900 --> 00:18:02.390 street elevations on EKG as well

NOTE Confidence: 0.928537127916667

00:18:02.390 --> 00:18:03.560 as elevated troponin.

NOTE Confidence: 0.928537127916667

00:18:03.560 --> 00:18:05.408 You can also localize the lesion based

NOTE Confidence: 0.928537127916667

00:18:05.408 --> 00:18:07.397 on the pattern and distribution of St.

NOTE Confidence: 0.928537127916667

00:18:07.400 --> 00:18:09.840 Changes 2-3 ADF are inferior

NOTE Confidence: 0.928537127916667

00:18:09.840 --> 00:18:12.280 leads correlating with the right

NOTE Confidence: 0.928537127916667

00:18:12.360 --> 00:18:14.439 coronary artery territory.

NOTE Confidence: 0.928537127916667

00:18:14.440 --> 00:18:16.932 1A D LV5V6 are lateral leads which

NOTE Confidence: 0.928537127916667

00:18:16.932 --> 00:18:18.841 correlate with the circumflex territory

NOTE Confidence: 0.928537127916667

00:18:18.841 --> 00:18:21.905 and V1 to V4 are your anterior leads

NOTE Confidence: 0.928537127916667

00:18:21.979 --> 00:18:24.199 corresponding with LED territory.

NOTE Confidence: 0.928537127916667

00:18:24.200 --> 00:18:25.540 It's also very important to triage

NOTE Confidence: 0.928537127916667

00:18:25.540 --> 00:18:27.770 who goes to the Cath lab emergently

NOTE Confidence: 0.928537127916667

00:18:27.770 --> 00:18:29.460 versus urgently versus on a

NOTE Confidence: 0.928537127916667

00:18:29.526 --> 00:18:31.278 selective angiography basis.

NOTE Confidence: 0.928537127916667

00:18:31.280 --> 00:18:33.910 After further ischemic testing and

NOTE Confidence: 0.928537127916667

00:18:33.910 --> 00:18:35.800 monitoring and then recognizing the

NOTE Confidence: 0.928537127916667

00:18:35.800 --> 00:18:37.160 cornerstones and medical management

NOTE Confidence: 0.928537127916667

00:18:37.160 --> 00:18:39.227 of acute coronary syndromes which

NOTE Confidence: 0.928537127916667

00:18:39.227 --> 00:18:40.559 includes antiplatelet agents,

NOTE Confidence: 0.928537127916667

00:18:40.560 --> 00:18:41.054 anticoagulation,

NOTE Confidence: 0.928537127916667

00:18:41.054 --> 00:18:44.018 high intensity statin and things to

NOTE Confidence: 0.928537127916667

00:18:44.018 --> 00:18:46.166 prevent further adverse cardiovascular

NOTE Confidence: 0.928537127916667

00:18:46.166 --> 00:18:48.558 events like smoking cessations,

NOTE Confidence: 0.928537127916667

00:18:48.560 --> 00:18:49.895 beta blockers, aces,

NOTE Confidence: 0.928537127916667

00:18:49.895 --> 00:18:51.675 herbs and weight loss,

NOTE Confidence: 0.928537127916667

00:18:51.680 --> 00:18:53.311 here are some of the sources used

NOTE Confidence: 0.928537127916667

00:18:53.311 --> 00:18:55.359 in this video and some more information.

NOTE Confidence: 0.928537127916667

00:18:55.360 --> 00:18:57.215 The Life in the Fast Line website

NOTE Confidence: 0.928537127916667

00:18:57.215 --> 00:18:58.915 is really great for practicing

NOTE Confidence: 0.928537127916667

00:18:58.915 --> 00:19:01.040 identifying STEMI and STEMI equivalents.

NOTE Confidence: 0.928537127916667

00:19:01.040 --> 00:19:02.804 A lot of the Ek GS in this video

NOTE Confidence: 0.928537127916667

00:19:02.804 --> 00:19:04.039 are from this website.

NOTE Confidence: 0.928537127916667

00:19:04.040 --> 00:19:06.077 I also cited the most recent guidelines,

NOTE Confidence: 0.928537127916667

00:19:06.080 --> 00:19:08.750 the 2021 AHAACC guidelines and up

NOTE Confidence: 0.928537127916667

00:19:08.750 --> 00:19:10.713 to date which has some really great

NOTE Confidence: 0.928537127916667

00:19:10.713 --> 00:19:12.318 algorithms on managing and STEMI,

NOTE Confidence: 0.928537127916667

00:19:12.320 --> 00:19:13.616 STEMI and unstable angina.

NOTE Confidence: 0.928537127916667

00:19:13.616 --> 00:19:15.236 Thank you guys so much.

NOTE Confidence: 0.881847381666667

00:19:15.240 --> 00:19:16.560 This is the Yale 20 video.