PET CT With 18F-FDG Can Predict Late Aortic Complications After TEVAR For TBADs

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Conclusion
Enhanced FDG uptake may be considered as a complementary imaging marker associated with secondary complications in type B dissections. During follow-up, aneurysmal progression is related to PET/CT and biomarkers of thrombus renewal and lysis.

Results:
Ongoing FAD & LIDIA studies
(Fighting Aneurysmal Diseases) & (Liège study on Dissected Aorta)

Type A & B AORTIC DISSECTIONS

Stable Type II (Type A, after surgery)

Unstable Type B

PET-CT & Biology

At admission, 3, 12, 24 & 36 months

TEVAR

Follow-up

PET-CT & Biology

3, 12, 24 & 36 months

Stable

Unstable

TEVAR

Follow-up
Ongoing FAD & LIDIA studies
(Fighting Aneurysmal Diseases) & (aortic study on Dissected Aorta)

11 TEVAR*
1 open surgery
2 Endoleak**
18 unoperated
2 progression of TAD***

*All patients with (+) PET underwent for TEVAR
** 1 Patients with proved ACTA 2 mutation with (+) FDG Uptake
*** with (+) FDG Uptake

Visual Analyses at Segment Level and FDG uptake quantification, Standardized Uptake Values (SUV)

\[
\text{SUV}_{\text{max}} = \frac{\text{injected dose (MBq)}}{\text{patient body weight (kg)}}
\]

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\text{SUV}_{\text{liver}} = \frac{\text{injected dose (MBq)}}{\text{patient body weight (kg)}}
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\text{SUV}_{\text{max}} / \text{SUV}_{\text{liver}} = \left( \frac{\text{injected dose (MBq)}}{\text{patient body weight (kg)}} \right) / \left( \frac{\text{injected dose (MBq)}}{\text{patient body weight (kg)}} \right)
\]

outcome of the type B dissection (with monofocal 18F-FDG uptake after TEVAR)

Outcome of the type B dissection (with increased multifocal 18F-FDG uptake)

Genome sequencies (for SMAD 3?) are in progress
51 years male patient, following after Type A dissection. TEVAR performed for increasing diameter of aneurysm (64mm). (ACTA2 mutation)

Conclusion

Our translational clinical investigation demonstrates that, increased multifocal 18F-FDG uptake in dissected aortic wall can predict not only the evolution of chronic dissection but also can predict the outcome of the patient after TEVAR.

Increased large monofocal (Ratio, SUV max/SUV Liver > 1) and Multifocal 18F-FDG uptake seems to be associated with some rare connective tissues disorders as ACTA2 mutations.

Nevertheless, further largest prospective studies are needed and our ongoing studies are in progress.