

## Emerging role of hepatoprotective treatment options

Prof Dajani

<b>Audio</b>	<b>Visual</b>
Music	Pr Dajani introduces <b>The effects of essential phospholipids in liver decline</b> Screen shows his picture and essential PLS
Music Liver decline starts as steatosis	What is liver decline? Prof Dajani in front of his desk
and can unpredictably progress to NASH, cirrhosis and hepatocellular carcinoma.	Picture of human body with liver highlighted and 4 stages of liver decline shown from steatosis, NASH to cirrhosis and hepatocellular carcinoma. Ref 1. Bhala N. et al 2013 2. Bertot & Adams 2016
Non-alcoholic fatty liver disease or NAFLD is this spectrum of changes. It is the most common liver disorder encountered. NAFLD poses a significant risk above and beyond the traditional risk factors for cardiovascular disease.	Diseased heart and blood vessel with plaque written traditional cardiovascular risk factor
It also causes a significant risk with type 2 diabetes mellitus, chronic kidney disease and makes inflammatory bowel disease and chronic pancreatitis worse	Images of glucose monitor, T2DM, kidneys, intestine and pancreas with pancreatitis Ref 3. Bryne & Targer 2015
So it is a multisystem disease.	On screen back to Prof Dajani:
Music NAFLD is a worldwide problem affecting 25% to 35% of the general population of which 25% will progress to NASH and its other complications.	Who are the people at risk of liver decline?" Prof Dajani at his desk diagram of liver representing the general population, showing 25% NAFLD containing, 25% NASH within it. Reference: 4. Younossi Z et al 2016 5. Perumpail BJ et al 2017
The NAFLD burden is expected to increase alongside the increasing incidence in obesity and type 2 diabetes mellitus.	Prof Dajani at his desk diagrams of human body with liver encircled for NAFLD, an obese individual labelled obesity and a hand with a drop of blood representing T2DM. Ref 5. Perumpail BJ et al 2017
People with steatosis and metabolic and cardiovascular comorbidities are especially at high risk of morbidity and mortality.	Picture of a diseased heart and cardiovascular morbidity and mortality References: 2-4
It is thus extremely important to detect and diagnose liver decline and to treat early when the disease can be prevented or reversed.	Diagram of healthy liver moving to steatosis, with or without fibrosis (steatohepatitis) to cirrhosis. Underneath a triangle shows that up until steatohepatitis moves to cirrhosis the decline is reversible, then a black area

	is marked irreversible. Underneath is a stop watch icon and the words treat as early as possible to avoid irreversible changes.
Music	Prof Dajani at his desk
Music	Is there any therapeutic option?
Lifestyle changes such as a combination of exercise and dietary restriction or sometimes surgery to reduce weight and supportive hepatoprotective agents can help in the management of NAFLD.	Prof Dajani at his desk pictures of person running Lifestyle changes (physical exercise), Dietary restrictions a knife and fork, a stomach with a gastric band marked surgery and supportive hepatoprotective agents Ref 6 Leoni S et al 2016
One of those hepatoprotectors	Prof Dajani at his desk
are essential phospholipids also known as EPLs which work by restructuring the damaged hepatocyte membrane.	EPL appears Ref 7. Gunderman K et al 2011
and protect the mitochondria from oxidative stress	Prof Dajani at his desk
Music	What about your study to evaluate EPLs in NAFLD?
This was a prospective, randomised, open label study	Prof Dajani at his desk
With 324 NAFLD patients who either have NAFLD alone or with type 2 diabetes or mixed hyperlipidaemia these patients who received EPL for 24 weeks and then it was extended for 48 weeks.	Study illustrated, 324 NAFLD patients illustration of a patient with or without T2DM and mixed hyperlipidaemia then a circle showing two capsules of EPLs with dose of 2 capsules 3 x a day 1800 mg and then a second circle shows that the dose for the extension period as 1 capsule 3x day 900 mg Ref 8. Dajani A et al 2015
We investigated liver function evaluated by transaminases, liver integrity and liver responsiveness.	Prof Dajani at his desk Picture of liver and a graph marked function, liver integrity, 3 hexagons and responsiveness a hand.
Music	What were EPL effects in patients with NAFLD?
The study has shown a remarkable improvement of the clinical features of steatosis,	Prof Dajani at his desk
Transaminases dropped in the first 6 months of treatment in up to 80.5% of	Cartoon of transaminases test tube with downward arrow. Shows the figure of 80.5%

patients with lone NAFLD and in 84% of patients with NAFLD and type 2 diabetes and 87% of patients with NAFLD and hyperlipidaemia.	illustrated by coloured-in figures. NAFLD and Type 2 diabetes 84.1% 87.5% of NAFLD & hyperlipidaemia Ref8
Ultrasound improvement in NAFLD fatty infiltration was observed in 14% of patients in lone NAFLD	Diagram of liver ultrasound with upwards arrow, graph with improvement before and after 24 weeks of EPLs showing 14% improvement in NAFLD alone
26% in patients with NAFLD and diabetes and 20% in patients with NAFLD and hyperlipidaemia.	Graph of improvement before and after 24 weeks of treatment with 26% for T2DM and 20% for patients with hyperlipidaemia
Our ultrasound results were in agreement with other general findings elsewhere.	Prof Dajani at his desk
Finally there was a significant reduction in clinical symptoms after treatment, 61.9% of patients with the lone disease, 74% of patients with	Graph showing lone NAFLD proportion of patients with symptoms before and after EPLs treatment. Shows 61.9% of patients had no clinical symptoms p<0.01
74% of patients with type 2 diabetes and 76.9% of patients with NAFLD and hyperlipidaemia had no symptoms after treatment.	Graphs for patients with T2DM 79.4% no symptoms and hyperlipidaemia 76.9% no symptoms p<0.01 for both
Improvement in liver response was also evidenced by the regression of fibrosis as observed by elastography.	Prof Dajani at his desk
Music	Conclusion
This study has demonstrated that in patients with lone NAFLD or NAFLD with comorbidities like T2DM and hyperlipidaemia, the early treatment with essential phospholipids significantly improves	Prof Dajani at his desk
Liver function, liver integrity and liver responsiveness	Picture of liver and a graph marked function, liver integrity, 3 hexagons and responsiveness a hand. Appears
Music	Reference list and Sanofi logo